American Engineer

MAY, 1951

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WHAT MANNER OF MAN IS HE?

From Ike To Books To Unity—A Survey Tells How NSPE Is Thinking

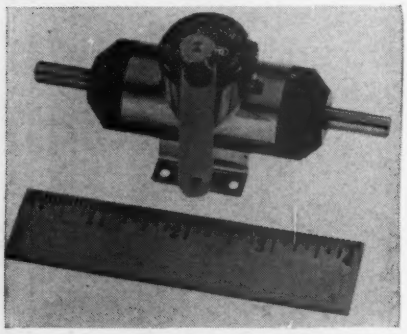
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS FOUNDED 1934

Attend The Annual Meeting — Minneapolis, June 14-16

What's New

As a service to our readers, this column will describe briefly new product developments of general interest to professional engineers. When writing manufacturers, we will appreciate your mentioning the American Engineer.

● The Metron Instrument Company has made available a new miniature variable speed drive with lever type speed control. The new type 4B is the same size and construction as the original type 4A which has thumb screw speed adjustment. This small, compact, sealed unit has ratings up to 2-pound-inches of torque, 0.025 horsepower, 20,000 RPM, and the ratio is infinitely variable from 1/6 to 6.



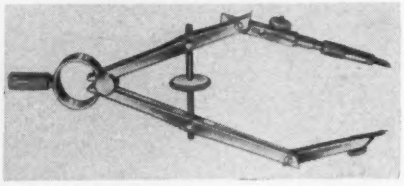
Applications include timers, recorders, controllers, computers, indicating mechanisms, business machines, and similar low power devices. For further details write the Metron Instrument Company, 432 Lincoln Street, Denver 9, Colorado.

● An ear instrument that will stop loud sudden noises from reaching the ear drum yet admit conversational tones is now available, according to Sigma Sales Corporation, Los Angeles.

The Lee Ear-Valv eliminates the harmful effect of sudden blast-type noises on the ear drums and while doing so, leaves the ear canal open, permitting the passage of normal voice level sounds. It also eliminates the force caused by the vacuum following an explosion, which is more harmful to the ear drum than the explosive force itself.

The ear protector is made of noncorrosive metal, treated in accordance with government specifications, and soft rubber. It is light weight, yet sturdy enough to withstand dropping upon a hard surface. For further information write the Sigma Sales Corporation, 1491 North Vine Street, Los Angeles 28, California.

● The new Kern "Circle Master" Compass, designed for use by industry, is now being marketed in this country by Borden & Riley Paper Company, New York, exclusive importers.



Unusual flexibility marks the "Circle Master" Compass. This is made possible by the unique design of the knee joints which can be quickly and easily adjusted to the various circle sizes without altering the setting of the center wheel. This design is also advantageous where inking is essential, since the pen point may be readily adjusted for a free flow of ink. With Kern "knee action" industrial users can now draw as fine a circle as can be obtained with the traditional small bow compass.

The pencil holder is the popular Kern "Chuck," and is adjustable to all sizes of lead, including commercial stationery leads and all popular color leads.

Available at art supply houses, stationery stores, Blue Printers, Engineering and Drafting Instrument Supply Houses. For additional information and prices, write to Borden & Riley Paper Company, Inc., 60 East 11th Street, New York 3, New York.

● A new automatic telephone answering machine called the Electronic Secretary is announced by the Electronic Secretary Distributors, Inc., Milwaukee, Wisconsin.

The Electronic Secretary answers the phone automatically, takes messages and also tells the caller when its owner will return. In case of an emergency at night, the caller is told where the official can be reached. The device is easily installed as it is not connected to the phone. Just plug it in and use. And, as an extra feature, the unit serves as a handy portable dictation machine.

For further information and literature write Electronic Secretary Distributors, Inc., 803-A West National Avenue, Milwaukee 4, Wisconsin.

● Now available commercially is a self-contained Diesel Pile Hammer which requires no auxiliary equipment to maintain pressure. This revolutionary pile driving tool is 15 feet 6 inches long, weighs 11,000 pounds, delivers driving energy at the rate of 16,000 foot pounds per stroke and is capable of 84 strokes per minute. The weight of the striking part is 5,400 pounds; the maximum power stroke is 4 feet.

One-man operated, the force of each blow is remotely controlled by means of a hydraulic system which operates similarly to automotive hydraulic brakes. The force of each blow can be easily varied from zero to full power, and the unit will idle without impact and without stalling. Catalog information is available from the Syntron Company, 918 Lexington Avenue, Homer City, Pennsylvania.

● Mayo Tunnel & Mine Equipment has prepared a Wall Chart for the ready conversion of Meters to Feet-and-Inches. This will prove of great value to those Consulting Engineers engaged on projects in Central and South America. A copy of this Chart may be obtained by writing to Mr. Robert S. Mayo, Civil Engineer, Lancaster, Pennsylvania.

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Editor
KENNETH E. TROMBLEY

Business Manager
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Publications Committee, NSPE
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Chairman

Happy is the man that findeth wisdom,

And the man that getteth understanding:

For the merchandise of it is better

than the merchandise of silver,

And the gain thereof than fine gold.

—PROVERBS 3: 13-14

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EDITORIALS

Honored by Industry . . .

The 1950 Annual Report of Pitney-Bowes, Incorporated, has just come to hand. This huge manufacturer of mailing and postal metering machines, has dedicated this new report on its operations to the engineer. The dedication as it appears on the title-page deserves repetition here. It reads as follows:

"To the engineer in Pitney-Bowes—and to the engineer in industry—we dedicate this 31st Annual Report, recognizing the decisive but seldom sung role of the man with the slide rule in the progress of our company, and in the growth of our country. At this hour, we are profoundly aware of the production engineer and his partner, the development engineer—and their teammates in drafting room and tool room, in model shop and machine shop—who labor in proud anonymity to bring the dreams of free, enterprising men from the potential of the drawing board to the reality of the production line. Today, an America that seeks peace, but must arm for war, again calls upon this unique man of industry to tool up the Nation for another great battle of production. In peace or in war, we trust this man with the brains, the know-how, and the calm self-effacement. And we salute him, wherever he is . . . in the vast aircraft plant, the precision business machines factory, or the machine shop. Let us use with skill and faith, the tools of freedom he is designing."

It is indeed gratifying for the professional engineer to know that such a tribute has been given wide distribution by the Pitney-Bowes firm. This is another indication of the growing appreciation American industry is beginning to lavish upon its engineers. The NSPE takes note of this trend with high commendation.

Truth and Russia . . .

In its editorial columns, the *New Yorker* magazine recently took the American people to task for their strong disinclination to tell the rest of the world about its ideals and accomplishments. It points out that we are willing to spend some 36 billions for a military program and yet hesitate at providing a few dollars for a voice clarifying our aims and beliefs. The publication goes on to state that if we are to compete successfully with the throaty call of the Communist heartland, we shall have to develop a bit of a whistle of our own. We already have the Soviet voice at a disadvantage, the magazine states, and we should exploit it.

The Russians limit themselves to spreading what they call the Truth and to jamming the sounds that come from the other direction. They cannot disseminate information, because information would too often embarrass their Truth. We can do much better, the *New Yorker* says. We can, and should, spread the material an American reads each morning in his newspaper—news, definitions, letters to the editors, texts, credos, reports, recipes, aims and intentions. We must reach and astonish with our kind of reporting the millions who hear almost nothing of that sort and hardly know it exists. We can safely leave Truth to the Kremlin, and can broadcast instead the splendid fact of difference of opinion, a thud of ideas and coalition.

We believe, as the *New Yorker* does, that this hesitation to tell the world about ourselves is simply the hesitation of a democratic people, who are also an impatient and restless people, and people who feel no strong urge to define what they instinctively comprehend. But the time to talk and talk loudly is definitely here. As an influential profession of well-schooled men, the nation's engineers must accept its responsibility of giving the world a true picture of America. It has been said that engineers the world over speak in much the same language. Maybe it is up to us as engineers to create a greater understanding among the world's people.

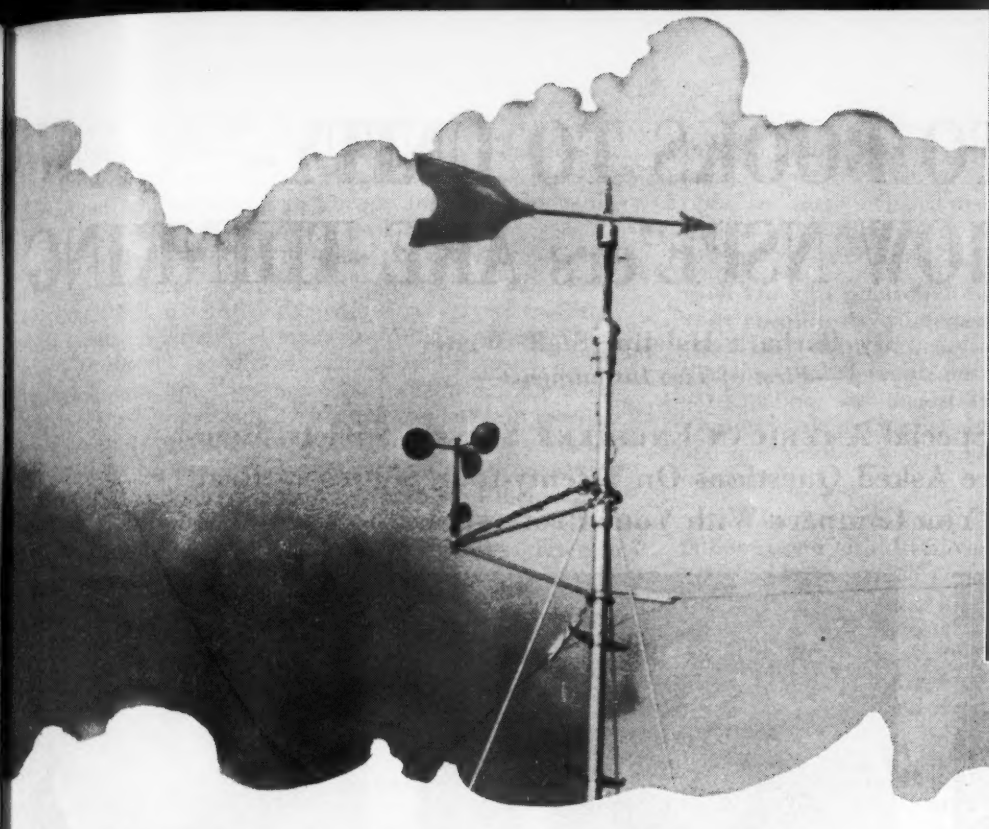
Tau Beta Pi Fellowshps . . .

This year again, Tau Beta Pi, honorary engineering fraternity, has selected eight students as winners of its annual fellowship awards for advance study. These young engineers, along with some thirty-seven thousand other graduates, are those who will make up the engineering profession of tomorrow. Moreover, many of them are destined to be leaders in a world that, from all present indications at least, will desperately need strong men with keen minds.

In the story that begins on pages fourteen and fifteen of this issue, the AMERICAN ENGINEER asked the fellowship winners a pointed question that, because of its tremendous scope, defies a pointed answer. Moreover, these young men were asked to frame their answers in not more than three hundred words. The question: Writers say the future of the world is in the hands of the engineers. Do you agree? The answers received are provocative, intelligent and brave. They are answers that logically recognize the serious challenge of the future, but there is no hint of defeatism or sidestepping. The spirit of youth is neatly coupled with a plan of attack.

With spirit and a plan, the engineering profession and hence the world, can prepare for greater days ahead. Only a few short years ago the profession took up sword and machine to fashion Freedom's fight for peace. Successful in carrying out their share of this tremendous task, America's engineers turned to their normal peaceful efforts of giving the nation the benefit of its skills. Now, once again, in the midst of emergency, the profession again stands ready to serve.

Older engineers would like to offer next month's graduates a more settled profession as well as a more settled world. But if the young will trouble themselves to brush up on history, they'll discover with satisfaction that theirs is a better profession today than it was twenty or thirty years ago. As to the world, may they succeed where those in the past have failed.



We'd Like to Have You Meet . . .

Athelstan F. Spilhaus, P.E.,

Member, Minnesota Society . . . Meteorologist . . . Inventor of the Bathythermograph . . . Oceanographer . . . Traveler and author of children's books . . .

YOUTH, brilliance, vast and varied experience and a keen interest in many subjects are all qualities which can be attributed to the man we introduce this month—Mr. Athelstan Frederick Spilhaus, P. E., Minnesota Society member, and expert on Meteorology and Oceanography. Born at Rondebosch, near Cape Town, Union of South Africa, in 1911, Spilhaus was interested in science and engineering from childhood. He entered the University of Cape Town in 1927, and, between attending courses at the University, worked as an engineer at sea on several lines.

Upon receiving a Bachelor of Science degree in mechanical engineering from the University of Cape Town in 1930, he worked in Germany for a year, and then arrived in the United States. Upon his entry to America he was admitted to graduate work in aeronautics at M. I. T., where he completed his Master's degree in 1931. He was subsequently appointed as research engineer for the Sperry Gyroscope Company in Brooklyn, but returned to M. I. T. in 1932 for three years of further advanced study in the field of meteorology. In 1935, he returned to the Union of South Africa for the purpose of entering the Union of South African Defense Forces, and took up the position of Assistant Director of Technical Services as a commissioned lieutenant. During the year spent on this assignment, he initiated the first upper air investigations in South Africa and completed other meteorological research in addition to duties in various fields, including aerial photogrammetry.

Returning to the United States, he was appointed Assistant Professor of Meteorology at N. Y. U., and in 1938 was made Chairman of the Department of Meteorology, which he had inaugurated. It was during this time that he developed and used the Bathythermograph, in connection with oceanographic work. This instrument was later utilized extensively in connection with sonic detection in anti-submarine warfare in all oceans during World War II.

In 1943 Spilhaus entered the United States Army as a Captain and left active duty three years later with the rank of Lieutenant-Colonel. During his tour of duty he was closely connected with the production of new equipment.

Spilhaus became an American citizen in 1946, and received his Doctor of Science degree from the University of Cape Town in 1948. In 1949 he became Dean of the Institute of Technology at the University of Minnesota, and he is presently on loan from that institution to the Department of Defense, where he is working on a special assignment.

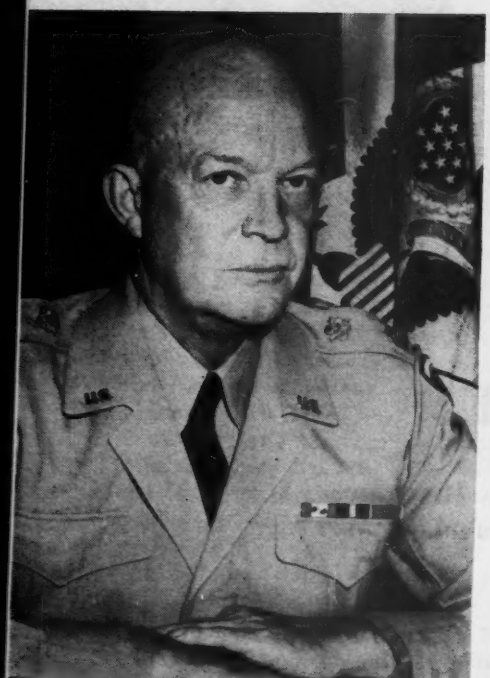
Spilhaus says it's hard to tell where his work leaves off and his hobbies begin—many of his developments began as spare time occupations in his basement workshop. Last summer he completed a children's book, working with his own children, entitled *Weathercraft,* which will be published in May by the Viking Press.

Spilhaus advises the young engineer to "recognize that engineering is an imaginative occupation where you sometimes take a gamble. Young engineers should not have a prime interest in security (the company's pension plan), but should develop their knowledge so that this in itself guarantees them the security in later life."

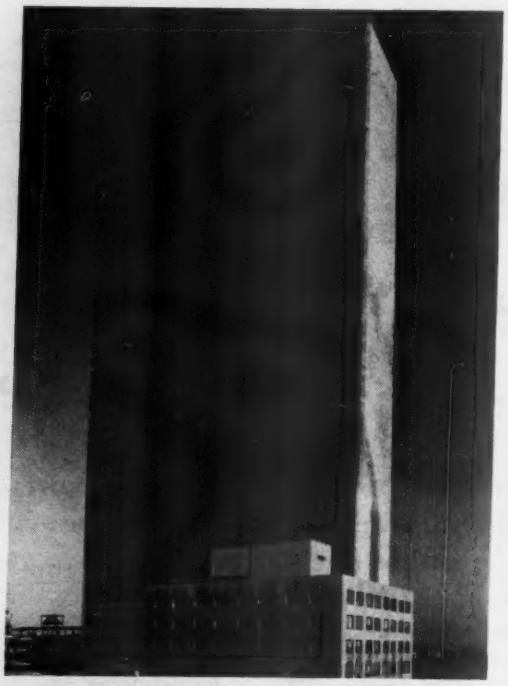
FROM IKE TO BOOKS TO UNITY— HERE'S HOW NSPE'ers ARE THINKING

By Barbara Haislip, Staff Writer
—First of Two Installments—

In This Special AMERICAN ENGINEER Survey, Society Members Were Asked Questions On Twenty-four Subjects. Read How You Compare With Your Professional Brothers.



Soldier . . .



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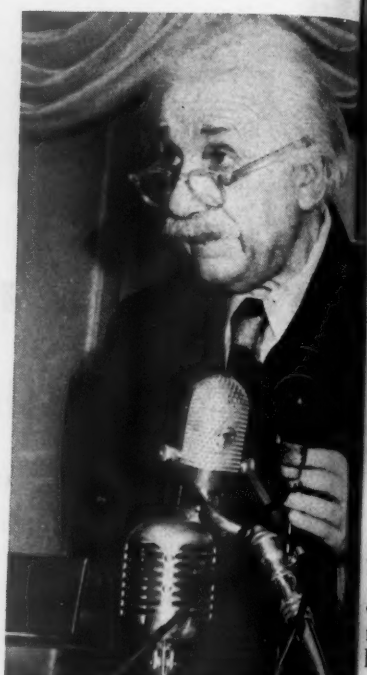
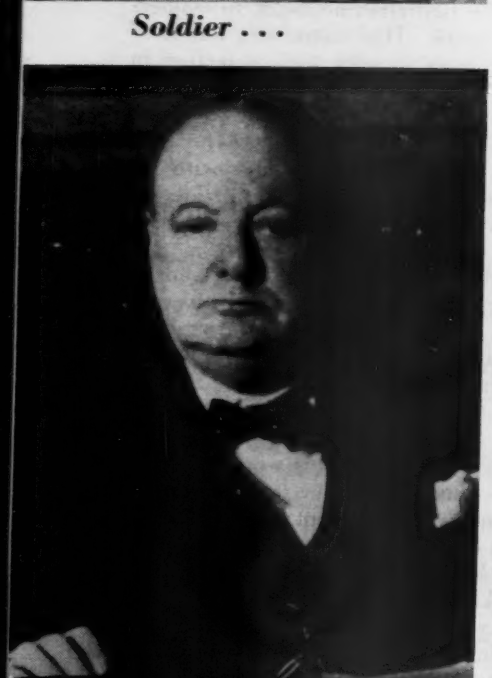


Scientist . . .



Statesman . . .

Engineer . . .

Religion . . .

WHAT is the average NSPE member like? What does he do for recreation? Is he married? What does he think about unifying the profession? How does he feel about sending troops to Europe and the value of the UN? Would he like his son to be an engineer?

Interested in finding out what the professional engineer is thinking about current affairs, the AMERICAN ENGINEER this month conducted a survey of several hundred members via a questionnaire. An effort was made to reach engineers in all the various NSPE areas of the United States, but those who received the questionnaire were selected impartially. Although the answers received were carefully tabulated and classified, this survey was not intended to be a scientifically accurate one. Answering members were given an opportunity to sign their names and addresses if they had no objection to being quoted, and those who did not will have their views presented anonymously.

Space does not permit the inclusion of all the results in this issue, and so the June issue will contain the second and final article in this series. In an effort to insure clarity, the question will be given first in blackface type, although not necessarily in the order in which it originally appeared, and the evaluation of results will follow.

1. Are you married? If so, how many children? Mr. Average Member is very much married. Ninety-seven per cent of the members quizzed are married, and of this group each member averaged 2 children apiece. Nine children was the highest number registered for any one individual.

2. Are you a member of any social organizations? If so, list them. Sixty-nine per cent of those surveyed are members of social organizations, ranging from fraternities to bridge clubs and fraternal groups.

3. Do you attend church regularly? Occassionally? Member? Church membership rated higher with 70% than regular attendance with only 44%. Fifty-one per cent of those answering attend church occasionally. (Many members marked more than one answer, accounting for the high percentages on this question.)

4. What civic clubs or activities are you active in? Ranging from Boy Scout and P-T-A work to membership in Good Neighbor Clubs, 62% of the members polled take an active interest in the civic advancement of their community. Financial aid to civic activities was mentioned frequently, and many stated their willingness to serve in various capacities whenever called upon.

5. Do you have any hobbies? If so, what are they? Ninety-two per cent of the members polled responded that they have hobbies, but in many cases their hobbies coincided with their recreational activities. (See next question.) However, some members did have such unusual hobbies as collecting Confederate money, chess by correspondence, refinishing antiques and anthropology. Poetry, astronomy, flying, bible study and recreational mathematics were also mentioned by several.

6. What do you do for recreation? Reading led all other activities for recreation, followed by fishing as second choice. Golf and hunting were tied for third place, and card-playing (bridge and poker for the most part) dropped into fourth. Gardening was fifth choice, and travel and theater attendance were tied for sixth place. Photography and woodwork were tied for seventh place, followed by movies, sailing and hiking, in that order. TV, sports (active and spectator), and dancing were also mentioned many times. One vote each went to creative writing, cooking, ranching and raising chickens.

7. What professional organizations do you belong to in addition to NSPE? Seventy-seven per cent of those responding belong to other professional organizations, and these included many State Societies of NSPE, as well as technical engineering societies and legal and education associations.

8. Do you participate in any artistic activities in your community such as music, Little Theater work, etc.? List them. Twenty-seven per cent of those questioned answered yes to this question. Of this group, the participation was almost evenly divided between Little Theater work and music, although some did work with art and one member is chairman of an artistic center in his community.

9. List five qualities which you believe a successful engineer should have. Ninety-four per cent of those surveyed answered this question with their suggestions. Due to the subjectivity of the question, however, answers varied a great deal. Qualities mentioned most often were integrity, perseverance, the ability to get along with people, intelligence and a sincere interest in his work. Religious sensibility and a love of beauty were also given frequent listing.

10. Which non-technical subject or subjects that you studied in college have helped you the most? Of the 91% who answered this question, the highest vote was cast for English (grammar and fundamentals of writing). Next listed were Economics and Public Speaking. History, accounting and languages followed in that order, and Law and Psychology tied for seventh place. Mentioned frequently were Philosophy (Logic and Aesthetics), Literature, Labor Management, Journalism, Business Administration, Military Subjects, Social Science, Fine Arts (music and art), Botany and Biology. (For an interesting comparison note the results received from the next question.)

11. What subject or subjects that you did not have in college would have been of particular benefit to you later on? Eighty-six per cent of the members questioned answered this one with various subjects. Public Speaking was far and away the choice here, receiving almost double the number of votes cast for its runner-up. Psychology. Business Administration was third, followed closely by Law (including several votes for labor law), and Accounting, Economics and Salesmanship tied for sixth place. In addition, many members listed English writing, fine arts appreciation, typing, public relations study, shorthand, sociology, logic and government.

12. In your opinion, how can unity of the engineering profession best be achieved? Thirty-five per cent of those answering this question stated flatly that NSPE was the only answer, while 65% offered various suggestions, many actually depended upon a successful NSPE. The only middle-grounder was Maurice E. Barker of Fayetteville, Arkansas, who made the following comment: "I doubt that real unity is desirable. Engineers occupy too many different types of positions to make real unity possible without destroying individual initiative." Sample answers given by various members as follows: C. Kyle Dunbar, Baton Rouge, Louisiana, "Strict enforcement of registration laws, forceful publicity and proper professional attitude of engineering employers toward engineering employees"; Anonymous, "The NSPE should confine its activities to advancement of the profession—allied societies should confine their activities to the technical advancement of the branches of the profession"; John B. Farr, Scotch Plains, New York, "By reaching and interesting young potential engineers. By educating

industry and engineers therein to place proper value on professional recognition"; and Peter J. Allen, Denver, Colorado, "By getting as tough as the doctors and lawyers." Many members listed compulsory registration and extensive public relations campaigns as possible solutions.

13. Who, in your opinion, is the outstanding world figure in each of the following fields at the present time? Eighty-two per cent of those polled, answered this question, and the question was composed of 13 fields. Here are the results.

Government. Winston Churchill won first place by a land-slide, winning 43% of the votes. Robert A. Taft, Senator from Ohio, and Joseph Stalin were tied for second place with 12% each, and President Truman was third with 10%. Secretary of State Dean Acheson polled 4% of the votes for fourth place, and Bernard Baruch, Senator Estes Kefauver, Pandit Nehru and Herbert Hoover were tied for fifth place. Trygve Lie, General MacArthur, Supreme Court Justice Fred Vinson, James Byrnes, Harold Stassen, Senators Richard Russell and the late Arthur Vandenberg, and Defense Mobilization Chief C. E. Wilson also received several votes apiece.

Religion. Pope Pius XII, apostolic head of the Roman Catholic Church, was well ahead in this field with 40% of the votes cast for him. Reverend H. E. Fosdick, Baptist, and Bishop Bromley Oxman, Methodist, were tied for second place with 11% each, and Evangelist Billy Graham took fourth place with 6%. Several votes apiece went to Monsignor Fulton Sheen, Roman Catholic; Rufus Jones, Quaker; Daniel Poling, Baptist; Bishop Sherrill, Episcopalian; Cardinals Mindzenty and Spellman, Roman Catholic; Norman Vincent Peale, Dutch Reformed; Pandit Nehru, Hindu; Albert Sweitzer, no denominational listing; Dr. Franklin C. Fry, United Lutheran; and Charles P. Taft, lay Episcopalian. The late Mahatma Ghandi, Hindu, and Peter Marshall, Presbyterian, ex-Senate chaplain, were also mentioned in the voting due to their continued effect on world religion.

Engineering. Herbert Hoover was favored most highly in this field, polling 30% of the votes cast. Charles Kettering, automotive engineer, was next highest with 11% and D. B. Steinman, bridge builder and NSPE member, was only two votes behind for third place. Others mentioned most frequently included Boris A. Bakhmeteff, New York consulting engineer, and Arsham Amirkian, Head Design engineer, Navy Department, Washington, D. C.

Industry. Charles E. Wilson, GE czar and present Defense Mobilization chief, walked away with this classification, receiving 43% of the votes. Next highest was automobile manufacturer Henry J. Kaiser with 20%, followed by Benjamin Fairless, U. S. Steel, with 8%. Henry Ford II received 7%, and K. T. Keller, President of Chrysler Corporation, trailed Ford by one vote to capture fifth place. In addition, several votes each were cast for James F. Lincoln, President, Lincoln Electric Company; Allen B. Dumont, President, Dumont Laboratories, and Eliot White Springs, manufacturer of Spring-Maid sheets.

Humanitarianism. Herbert Hoover captured first place with 24%, being the only man to win in two fields. Bernard Baruch and Eleanor Roosevelt tied for second place, and UN mediator Ralph Bunche placed third. Walter Winchell, Salvation Army General Boothe and Harry Truman were tied for fourth place. Several votes apiece went to the following: Norman Cousins, Editor, *Saturday Review of Literature;* Albert Sweitzer, philosopher and African missionary; and Sister Kenny, known for her work in infantile paralysis.

Education. James B. Conant, President of Harvard University, won this section by one vote, R. M. Hutchins, Ex-president of the University of Chicago, running up. Dwight D. Eisenhower of Columbia University placed third, and Harold Stassen, President of the University of Pennsylvania, won fourth place. Receiving frequent mention were: Dean Thorndike Saville, College of Engineering, N. Y. U.; J. Robert Oppenheimer, Physicist, Princeton University, and Everett Case, President of Colgate University.

Science. Not only did Albert Einstein place first in this field with 62%, but he polled more votes than anyone in any single section. Runner-up was Karl T. Compton, President of M. I. T. with 9%. James B. Conant of Harvard placed third, and Harold C. Urey, atomic research scientist, and chemist Henry Eyring received several votes apiece.

Music. Maestro Arturo Toscanini conducted himself into first place, winning 32% of the votes. A gentleman in quite another branch of music took second place with 8% of the votes—Mr. Bing Crosby. Dmitri Shostokovitch, Russian composer (*Saber Dance*), tied for third place with Jan Sibelius, Finnish composer (*Finlandia*), Irving Berlin, popular composer (*Always*), and Jose Iturbi, concert pianist and sometimes motion picture star. Others receiving several votes apiece included: Richard Rodgers, musical comedy composer (*My Heart Stood Still*), Rudolph Bing, impresario of the Metropolitan Opera; Wagnerian Soprano Kirsten Flagstad and contralto Marian Anderson. In addition, individual votes were cast for some twenty others.

Literature. William Faulkner, Mississippi-bred novelist and winner of the Nobel Prize for Literature in 1950, took first place with 17%. British novelist Somerset Maugham placed second, and philosopher Bertrand Russell shared third place with two recently deceased authors —George Bernard Shaw and Sinclair Lewis. Also well-represented in the voting were: religious author Lloyd C. Douglas; journalist Dorothy Thompson, French Existentialist writer Jean-Paul Sartre, and playwright Mary Chase, author of "Harvey."

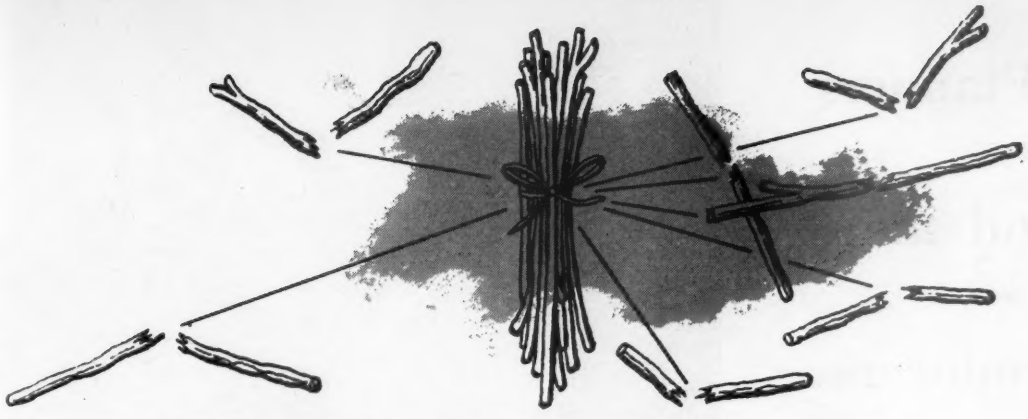
Theater. Sir Laurence Olivier received another title, securing first place by 15%. Ethel Barrymore and Helen Hayes tied for second leads, and the inseparable Lunts placed third. Individual choices were too numerous to be listed.

Labor. Walter Reuther, President of the United Automotive Workers, nosed the fiery John L. Lewis out of first place by a scant two votes. William Green and Phillip Murray tied for third place, and mediator Cyrus Ching ran fourth.

Medicine. The Mayo Brothers walked away with first place in this field, voters stating they could not separate the two. In second place was DuVigneaud of penicillin fame, followed only two votes away by Sir Alexander Fleming, also known for his penicillin work, and Philip Hench, rheumatic diseases specialist with the Mayo Clinic. Paul de Kruif, medical writer (*The Microbe Hunters*), also figured prominently in the voting.

Military. General Dwight D. Eisenhower won first place with 47%, just three votes ahead of General Douglas MacArthur. Throughout the early days of tabulation, Eisenhower held a substantial lead, but the Truman-MacArthur incident brought the Pacific General very much to the fore. However, in the final days of tabulation, Eisenhower re-captured his former position. General George C. Marshall placed third, and Generals Raymond A. Wheeler, Lawton G. Collins and Matthew Ridgway received frequent mention.

Next month our series will conclude with the reactions of those polled to such questions as "Do you feel that war with Russia is inevitable?", "Do you have faith in the United Nations?", and "Do you feel that the U. S. should send troops to Europe to support the Atlantic Pact?".



UNITY FOR WHAT?

By Clarence T. Shoch, P.E.,
Member, NSPE, and Chairman, Legislative Committee

WE in the electric utility business have a saying, trite perhaps, that "Abundant life in these United States hangs by a slender thread—the slender thread of copper conductor that leads from the electric service pole to your home or place of business." No doubt all purposeful groups have equal conceptions of the importance of their work. No doubt, too, all would agree that effective cooperation among our many, many elements of society, and therefore the value of their respective contributions, hangs upon a slender thread—the thread of understanding.

It is refreshing and reassuring to explore this matter of understanding among groups interested in advancing the profession of engineering. If we start from a consideration of the basic needs of engineers and the engineering profession and apply simple logic, we should be able to avoid the pitfalls of jealousy, prerogative and other self-made hurdles of misplaced enthusiasm, which inevitably crop up if we look at matters from the standpoint of who is going to get the credit.

Before we get into a discussion of present-day needs of engineers and the engineering profession, however, let us recognize some needs that existed at one time but have been handled over the past in an admirable manner. Among these I would list: education for technical proficiency, post-college training and research, and a vehicle for keeping up-to-date in rapidly developing fields. These, of course, were the kinds of things that had to be done first. They were in the category of putting out the fire. Arguments as to the rights and interests involved could be left until later.

In those matters having to do with education, post-college training and so on, two groups stand out. One is the technical schools and colleges where curricula have been developed and applied to meet the ever increasing, constantly changing requirements in both producing and utilizing goods and services. The other is the technical societies which help the graduate pick up where the generalized training of the colleges leaves off, and carry him into the further specialization inherent in our complicated way of life.

The colleges of this country have been at this work for more than two hundred years. I understand that engineering courses were first placed on a systematic basis at West Point in 1817, followed by Rensselaer in 1824. The technical Societies, too, have had long records of useful service—the ASCE dating back to 1852, nearly 100 years. We stand in great respect, yes, almost reverence, of these two groups for their contributions to engineering education, training and research.

JUST as any part of our competitive economy must continuously prove its worth, so must the engineering profession move ahead if it is not to be set back. With such basic needs as education, training and research well taken care of, we are now in a position to make progress in other matters of benefit to the engineer and his profession. These would strengthen the profession in public regard, enable its members to spread its useful work, control "coat-tail riding" by the incompetent and the unscrupulous, and justify a higher level in economic considerations.

All of us have our own particular conceptions of the needs of the engineering profession. Some, as I see them, are to increase the standards of mutual respect of one engineer for another, of one group of engineers for another group. Certainly we can't expect to continue quarreling among ourselves either as to the nature of the work we do or as to its benefit to society, or which engineering group takes precedence over which other group, and so on, without causing the public to think of us as poor managers, members of a would-be profession that cannot keep its own house in order and therefore not deserving of true professional status.

We need to develop a broader viewpoint of the problems of other kinds of engineers. For instance, engineers in private practice need to know and appreciate the viewpoints of engineers in industry, and vice-versa. So it is with engineers in government work or in the education field. All need to know what the other fellow is doing so that they may develop a common respect, to be reflected in all public contacts.

We need to develop an appreciation in the military and other proper government activities that the specialized education, training and skills of engineers should be utilized to the country's greatest advantage, in positions where the responsibilities are a challenge to their capabilities. Prob-

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Editor's Note: The great values of a unified front among the many engineering groups working for the social and economic opportunities of Engineers of all branches are well known. Needed now, is a workable plan of unity to effect prompt, positive action. Past President Van Praag, N.S.P.E's. representative to the Conference on Unity reported on the efforts of that Conference in the February 1951 AMERICAN ENGINEER. Inter-society Relations Chairman Fairman did likewise at the State Presidents' Conference in Washington in early March.

N.S.P.E's. position in the several suggested plans on Unity must be resolved soon. The matter has been scheduled for a complete airing at the Annual Meeting at Minneapolis in June. Mr. Shoch's article offers a timely starting point for consideration by all Engineers—in or out of N.S.P.E.

The Planners and the Producers...

lems in this category have to do with establishing realistic deferment policies applying to students training as engineers, and maintaining a proper balance between the requirements for engineers in the military and in production. We need to instill into the military mind the conception of engineers as professional people just as they have become accustomed to considering medical men.

Engineers And Labor Organizations

Another problem, particularly among our younger men is the separation of engineers from labor organizations and keeping them apart in a socialistic atmosphere where professional training, ability and initiative are not considered in the treatment accorded. A recent example of progress in meeting this need is the inclusion of the "professional provision" in the Taft-Hartley Act, and in having the present session of Congress exclude self-employed engineers from Social Security.

There is need for continued advancement in engineering education other than the purely technical, particularly along lines that will prepare the student in a professional manner. That is, prepare him better to meet the practical problems of business life that arise from considerations of labor unions, forced economics, political activity and similar realities that greatly influence his career.

It is necessary also to safe-guard the reputation of the engineering profession. This requires discreet policing of the work of engineers (particularly of so-called engineers), to require proof of competence and to see to it that such competence is maintained, and to be assured that engineering contributions are made in good faith.

HIGH among the ever-present needs is that of sustaining and improving the economic level at which those in the engineering profession perform. This does not mean an arbitrary opportunity to demand more pay, or to do less work for the same money. It is desirable simply in recognition of the opportunity that exists for making engineering a greater contribution to public welfare, thereby increasing its importance and justifying improvement in the earnings of those making up the profession.

So much for our present-day shortcomings. Those cited can be increased both in numbers and importance. However, you probably have noted a common thread of earthy matters among these needs, and must have sensed that it stems from considerations beyond those of engineering education or technical training. That is indeed the situation. The approach to the solution of these needs is largely one of relations—public relations; relations with our government; with industry; with other groups and with one another; yes, even political relations. The highest regard for engineers on all fronts depends upon the consistency and the concern with which each of us deals with his professional opportunities. Desired recognition becomes a matter of matching argument for argument and vote for vote, with the ever present forces that are trying to gain their own ends at our expense—not intentionally perhaps, but nevertheless effectively.

Who is best equipped to tackle such problems and bring them into effective control? What kind of a task force is needed to promote the engineer and his profession adequately and in a manner that will encourage enthusiastic support at the grass roots—your level and mine?

What Type of Men Are Engineers?

Before looking around for a group to represent the engineering profession effectively in matters dealing with service to society, recognition, control and economic gain, let's stop long enough to learn more about the characteristics of the men who make up and lead such groups. I believe it was the late President Wickenden of Case Institute who characterized engineers as straight-thinking men of integrity; men who deal with the stubborn and inflexible facts of nature and, therefore, little disposed toward double-talk and wishful thinking.

The engineer is factual, quantitative, analytical and impersonal—all indispensable characteristics in his realm of technical responsibility. Less likely attributes are a capacity for judicial thinking, an insight into the motives and reactions of others, and an instinct for evaluating and handling purely human situations. The engineer usually is too forthright for clever politics or soft-soaping diplomacy; and much too practical in matters concerned with political and economic systems, to be a do-or-die follower of any

party, judging one to be good only so long as it works. Consequently, the engineer is seldom prominent in politics or the public eye. If any rule of thumb were to apply to this comparison of technical vs. social characteristics of the engineer, it probably would be that the two develop inversely.

I am sure you will agree that in general, the leaders of our technical societies have earned those places of distinction largely by the value of their technical contributions in producing and utilizing the goods and services that contribute to our high standard of living. That does not necessarily mean they are qualified to promote the best "social" interests of the engineering profession. Nevertheless, in our search for a group to handle our present-day problems we must give first consideration to the long-established and well-directed Founder Societies and other technical societies, and to the "conference" of certain of those societies: the Engineers' Council for Professional Development (ECPD) and to the agency of the Founder Societies, the Engineers' Joint Council (EJC). After considering these, we will analyze the organization formed specifically to handle the non-technical type of problems at the National, State and Local levels—The National Society of Professional Engineers and its counterparts.

BEFORE commenting on what I consider to be the proper sphere of activity of a technical society or of the Professional Society, I would like to qualify myself by stating that I am a member of both, and I don't think either would object to suggestions or constructive criticism from members. So far as I know, there are no "individual members" in either the "Conference" (ECPD) or the "Agency" (EJC) mentioned above. However, my particular technical society is a "constituent member" so perhaps comment concerning their activities will not be wholly out of place.

Technical Society Membership Desirable

I take it for granted that most of us are members of technical groups. Certainly we should be. As members, or perhaps just as occasional interested visitors, we attend technical meetings of different branches of engineering. A quick look at the number of committee subdivisions of my particular technical society, with that number increased by a corresponding extent of specialization in practically all technical groups, convinces me that the interests of the members of most technical societies lie in the deeper exploration of continually narrowing channels of technical knowledge. The whole history of technical societies has been to break engineering down into its many, complex subdivisions, thereby widening the base of knowledge. That has been good for engineering, but has it been good in any comparable degree for the engineer?

The traits which make us engineers in the first place, also make many of us self-satisfied with specialization. The membership of a technical society, where the incentive is largely specialization, is likely to be a cross-section of people content in making progress in their particular technical field, without too much concern, unfortunately, for their own general welfare or, more unfortunately, for the welfare of their engineering brethren.

My point is of course, that technical societies lack experience in battling the social, political and economic forces which continually restrict the sphere of desirable engineering influence. More important perhaps, they lack also the psychological conditioning necessary to bestir themselves sufficiently to become effective against the competitive forces which shape the destinies of professions just as surely as they shape the destinies of businesses.

Technical Societies Admit Limitations

The repective Founder Societies, or any other technical society for that matter, would probably be the first to admit that it could not speak effectively concerning the needs of all kinds of engineers. Many have already indicated that they prefer not to tackle other than technical problems, even for their own members. The A.I.E.E. recently explored this matter among its membership and found that about three-fourths were of this opinion.

Looking at the work of the ECPD, the four principal areas chosen for the organization of the Council's operations are Student Selection and Guidance, Engineering Schools, Professional Training and Professional Recogni-

(*Continued on page* 32)

Mr. Gates, in profile, is shown second from right, at UNESCO meeting.

An Engineer Reports On UNESCO

By R. M. Gates, P.E.,

Member, NSPE, and Engineers' Joint Council Representative on UNESCO

UNESCO, the United Nations Educational, Scientific, and Cultural Organization, started out with a mandate "to contribute to peace and security by promoting collaboration among the nations" by activities in the three fields mentioned in its title. But education, science, and culture are very broad terms. Almost any kind of program or project could be related to one of these fields. A bewildering variety of suggestions was offered, for representatives of more than 50 nations and of many occupational interests could point out a bewildering variety of needs around the world. It was only natural that confusion and diffusion attended the early activities of UNESCO. In response to pressures from many sources, it tried to spread its limited resources and facilities over a wide range of projects—to ride off in all directions at once, one might say. This is what a group of representatives of many occupational backgrounds and many races and nations would almost inevitably do in a new venture of such broad and vaguely defined scope.

Some of these activities, nevertheless, have already shown worth-while results. In three years voluntary groups in the United States were responsible for sending over $200 million worth of materials and supplies for reconstruction of educational, scientific, and cultural institutions in war-devastated countries. UNESCO was active in publicizing needs and the Commission for International Education Reconstruction in this country coordinated and stimulated the activities of voluntary organizations related to educational reconstruction. The "adoption" of overseas schools and universities by American institutions was stimulated; also the sponsorship of training of foreign students in schools here and in Europe was extended. Educational equipment and materials have been furnished to some needy areas. A campaign against illiteracy is in operation in several areas with the successful one-teach-another system. A pilot project in fundamental education in the Marbial Valley of Haiti has attracted international attention. And not least in importance, the bringing together of scientists, educators, sociologists, and others from many nations, to canvass needs and ways to meet them, has obviously been a substantial contribution to mutual understanding among leaders in those fields, and with the presence of government officials has stimulated plans by individual governments along the line of UNESCO objectives.

THE experience of the past three or four years has led to some shaking down of the diffuse UNESCO program, and it appears that this process will continue. The idealism that prevailed at the outset, no doubt quite properly, is being tempered somewhat by a growing realism. It is more clearly understood that the world cannot be made over by UNESCO, that urgently needed and practicable short-term projects that serve long-term ends are preferable to attempts to leap to distant goals, and that the limits of the resources and facilities available to UNESCO require more concentration of effort. It is realized also that UNESCO as a catalyst, starting activities for others to carry on, may be more effective than UNESCO as a continuing administrator of projects it plans.

The United States National Commission for UNESCO, set up by act of Congress in 1946, is designed to furnish UNESCO advice and support. It has 100 members, of whom 60 are nominated by voluntary organizations in educational, scientific, and cultural fields and 40 represent federal and state governments and broadly the public at large. There are also State UNESCO councils in ten states. The members of the National Commission have naturally had the same difficulty as the members of UNESCO in reaching a consensus. Geographers, physicians, economists, sociologists, agriculturists, lawyers, clergymen, businessmen, engineers, labor leaders, and diplomats are likely to have different views of priorities among the world's needs and of ways of meeting the needs. The "shaking

down" process, however, has set in there, too.

It seems to an engineer (1) that theory is more largely represented than practice on these bodies; (2) that the engineering profession ought to be more largely represented on both UNESCO and the United States National Commission, for many of the things that need most to be done "to contribute to peace and security" are in part or in essence engineering jobs; and (3) that "science" should be interpreted to include applied science, instead of mainly "pure" science, as is now the case, since the immediate needs for science in most areas are for its practical applications.

Whether or not adequately represented on UNESCO and the United States National Commission, the organizations of engineers in this country and abroad can do much to serve the purposes of UN and UNESCO, not only through collaboration with these and other public agencies but also through their own domestic and international facilities. Engineers have been internationally minded and internationally active for generations. World Engineering Congresses were held even back in the nineteenth century. And engineers have scattered around the world as their services have been required from time to time.

IRON curtains offer the least resistance to engineering, because engineering is very much the same the world over. Even within the Soviet orbit, engineers probably take less seriously than most others the official Communist interpretation of American attitudes and purposes, because they get direct and objective information of the activities of fellow-engineers in the free nations. And peoples not yet behind the iron curtain may be helped to stay outside if engineering aid is given them toward solving their most urgent problems.

Many peoples have had reason to dislike or suspect foreign developers of their resources. Yet they welcome engineering surveys and other technical assistance which will show them how they themselves can make better use of their resources without upsetting their whole pattern of living. And some nations have invited and welcomed surveys intended to guide the investment of needed foreign capital. The more a proposed development is directly and obviously connected with the welfare of the people, and the better it is planned with social as well as economic understanding, the easier it is to enlist the local cooperation that will make it beneficial to all concerned. American engineers have had a part in many such foreign projects—private and semi-private and public.

Enterprises based on engineering may open doors for UNESCO, and provide a parallel economic program. On the other hand, UNESCO's activities may disclose needs for engineering aid and for investment of private capital on appropriate terms. Extensive cooperation between UNESCO and the engineering profession seems eminently desirable, even essential, in this world situation.

A practical plan of collaboration between UNESCO and international engineering organizations was agreed upon at Paris, in March 1950, by the Engineers Advisory Committee to UNESCO. Representatives of engineering organizations from England, France, India, Italy, The Netherlands, Sweden, Switzerland, and the United States were present. The meeting was called by the Director of the Natural Sciences Section of UNESCO, and three members of the UNESCO Secretariat were present.

A CONSTITUTION for a Union of International Engineering Organizations was adopted, with these stated "principal objects": (1) to coordinate the activities of the member organizations; (2) to make mutual arrangements for material and moral support; (3) to further relations with UN and its specialized agencies; and (4) to encourage the foundation of new engineering organizations in fields not already covered.

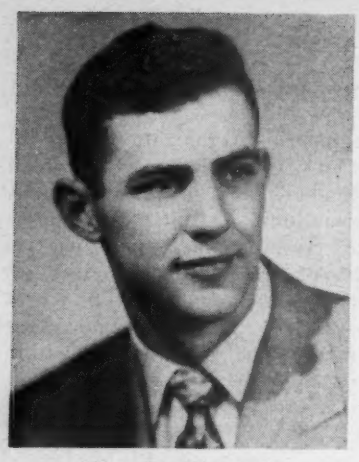
Fifteen international engineering organizations were invited to send delegates to an organization meeting which was held in Paris in September. These include the international federations, associations, institutes, or conferences in many diverse fields; railways, large dams, electric systems, gas, soil mechanics, irrigation, hydraulic research, bridges, navigation, welding, and others. The World Power Conference is among them. Eligible organizations must be concerned with international collaboration within the field of the engineering, and must have either an effective national committee or a substantial number of members in at least ten countries.

The Engineers Joint Council, representing the five United States technical societies of Chemical, Civil, Electrical, Mechanical and Mining Engineers, are dealing with engineering organizations in other American countries to form a Pan-American Union of Engineering Societies. A preliminary conference was held in Rio de Janeiro a year ago. This organization should be an important factor in international cooperation and in furthering UNESCO's plans.

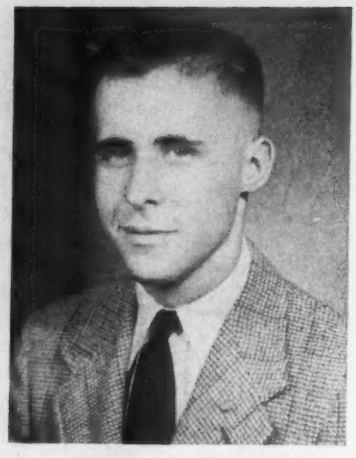
A CONFERENCE on a plan related to the general subject. "How Engineers Can Promote International Understanding," was held in New York in July between members of the Engineers Joint Council, representatives of other American engineering societies, and UNESCO representatives, including the head of the UNESCO Clearing House for Publications in Paris. It was agreed that the circulation abroad of the journals and the reports of transactions of American engineering societies is a definite influence toward international understanding and should be expanded in the interest of world peace. Since UNESCO's library bulletin has a world-wide circulation, including 8,000 libraries, it was arranged that UNESCO will offer through this bulletin a list of these periodicals with subscription rates, and that subscriptions to any of them may be paid in UNESCO coupons.

The Engineers Joint Council's International Relations Committee has now set up a Commission on Technical Assistance for the following primary purposes: (1) to establish and maintain liaison with such organizations as the Economic and Social Council and other UN agencies concerned with technical assistance, the United States Department of State (in its administration of "Point IV" and related operations), the Economic Cooperation Administration, and the Anglo-American Council on Productivity —in order that information or requests for advice or assistance from these organizations may be promptly channeled to the appropriate group or individuals; and (2) to give direction to any other activities that the Engineers Joint Council may decide to undertake in the field of technical assistance. The American Society of Mechanical Engineers also has close contact with the American Management Council, which is the United States member of the International Committee of Scientific Management and is collaborating with the ECA in advancing scientific management in Europe. In these ways the engineering profession in the United States is being brought into a more intimate and we believe more potentially effective relationship with the whole program of technical assistance.

These movements toward closer cooperation between UNESCO and the world-wide engineering profession, and between the engineering societies and other agencies concerned with international relations, should encourage practical extension of UNESCO activities along a line of both immediate and long-run need, and enlist the interest of a large group of professionally trained people whose coordinated efforts would be very helpful in realizing some of the most important of UNESCO's objectives.



Allan K. Hammell
Montana State College
Bozeman, Montana



Robert G. Rinker
Rose Polytechnic Institute
Terre Haute, Ind.

George A. Gray
Clarkson College
Potsdam, N. Y.

Frederick W. Nesline, Jr.
Univ. of Maryland
College Park, Md.

The American Engineer Asked This Year's Tau Beta Pi Fellowship Winners This Question:

Scientists Say The Future Of The World Is In The Hands Of The Engineers—What Do You Think?

. . . Here Are Their Answers

Mr. Rinker . . .

PURE science is rapidly progressing in the direction of new and profound concepts of nature. But how many people actually understand or make use of these advances? How many people are aware of the fact of nuclear fission, of rocket propulsion, or of electronic control? A little thought reveals that there exists between these two levels a large gap, and one which is progressively increasing. The gap must be spanned or man's progress will be moved back many years. Who, then, can fill the space between the known and the unknown? Who must digest the mathematical equations of the theoretical physicists and as a result, produce a tangible object useful to society? It is without doubt, the engineer.

This has always been the engineers' task, but the task is becoming far more difficult and at the same time, engineering is becoming a rational science. Thus, in the future, the engineer, in supplying the missing link, must be depended upon to hold together the chain of progress which links the scientific pioneer with society in general.

Furthermore, the engineers' job will require not only the application of ideas but also the ability to lead the uninformed to an understanding of the world they live in. Presently, this same problem of educating people in scientific fundamentals is quite serious and it must be solved by qualified people—the engineer.

These tasks, the engineer can perform by his technical knowledge. However, there is another problem of equal importance but far more subtle than the mere application of knowledge. This problem deals with principles of human relationship.

Many have said that engineers are weak in public relations. Undoubtedly, the engineering profession, in general, has refrained from entering public relations, because the standards to which politics and diplomacy are geared are below those of engineering. Engineers, therefore, have difficulty adapting themselves to these imperfect conventions in the everyday business and social world.

However, engineers would do a great favor for the world in its present situation by applying the Engineer Code of Ethics to other fields of human endeavor such as politics, business management, and the fine arts. By the use of this application, people would grow out of their artificial standards and the pettiness associated with so much of present day human relations.

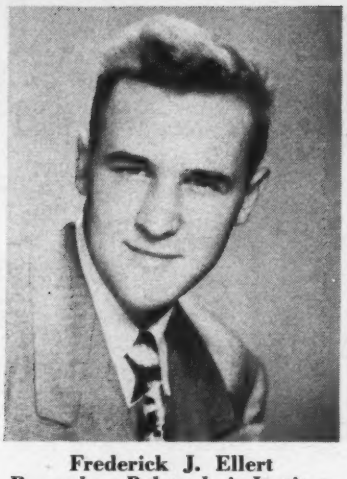
For example, business and government appointments would be made to those people best qualified for the position instead of to those who know the "right persons." Much of the red tape and childishness in politics would be eliminated if those in office were to adhere to an ethical code which demands that they follow the irreputable principles of service to their fellow men.

Taking a liberal view of the problem, one wonders why the engineering ethical code should be chosen as a standard. The answer lies in the fact that among all other codes the engineering ethics are intuitively broad in scope since they were developed over a long period by a great number of people in various fields of engineering.

Mr. Gray . . .

I DO not feel that the future of the world is *in the hands* of the engineer; nor will it be unless his in

George L. Durfee
Michigan College of Mining
Houghton, Mich.



Frederick J. Ellert
Rensselaer Polytechnic Institute
Troy, N. Y.

Douglas R. Briggs
Northeastern Univ.
Boston, Mass.

fluence is manifest through more active participation in civic, social and political affairs.

That the engineer, through his technology, will continue to be a powerful *influence,* perhaps *the* most powerful influence, on the future of the world, there can be little doubt. What is happening in the United States and spreading to other countries is indicative of the trend. Here technological developments of the engineer have caused changes in the lives of the present generation that many find difficult to comprehend. Those developments have made the United States a democracy of production, and the pace and pattern of human lives seems to be keeping in step with them. Even the forces of morals, religion, social conduct and physical well-being sometimes appear to have taken a back seat for them.

But back seat forces play no small part in the control of human lives and ultimately in the future of the world.

The engineer must couple his integrity, judgment, ability and ambition with a thorough consideration of the personal, social and civic problems and produce a balanced program of the "greatest good for the greatest number" if he is to be the leader with the future of the world in his hands.

Mr. Ellert . . .

WITH the complexity of our modern civilization, no one group of individuals is capable of completely understanding and wisely guiding it. This complexity is the result of the interaction of economic, political, social, and technological forces. Neither the economist, the statesman, nor the engineer alone can ever hope to cope with the ills, needs, and problems of the world. It is just as foolish to believe that the economist could successfully harness atomic energy for industrial purposes as it is to postulate that the engineering profession in itself could bring about a greater degree of cooperation among the nations and peoples of the world. Nor could any statesman, no matter how broad this background or how learned, find the cure-all of modern society.

Just as there is interaction of those forces evolving the present conditions, there must also be joint action among those individuals who understand these forces and are able somewhat to control them. Each person must contribute his knowledge and experience to the solution of the problems at hand. Each must also come to some understanding of the other phases of the problem in addition to his own.

It is in this aspect, therefore, that the engineer can play his most important role. He must not sit back with the satisfaction that his task is complete when the strictly technical phases of his work are complete. Each new development and discovery carries with it, as an inseparable part, a new responsibility. This is the responsibility of the engineer to his country and, even more so, to mankind in general. He must do his utmost to make certain that these new technological discoveries are not misused. The engineer must work with the economist and the civic leader and must assume part of their burden.

Arthur A. Wasserman
M. I. T.
Cambridge, Mass.

His obligation to society is not a small one. Whether he and the others who will guide us can successfully meet this challenge is not the question. They must meet it. Our civilization will be forfeited if they should fail.

Mr. Briggs . . .

THE world's future is in the hands and heart of the engineer. But does he *really* know it, and is he prepared to accept the awesome responsibility of his handiwork?

The engineer may build; he may also destroy. Today he seems to be performing both tasks with equal zeal and efficiency.

The ideal engineer should be a specialist engineer, and yet at the same time be an economist, politician, labor relations expert, pillar of the community, and "company representative" in and out of the plant. In short, he must be a prophet, counsellor, patriarch, wet-nurse, ambassador, and keeper of some mighty gruesome secrets. He must also have a world view of a sober sense of professional destiny.

By a curious sort of catalysis (The Bomb, *et al*) there is a growing tendency towards idolatry of a largely imaginary dual personality today: a specialist engineer who is good at everything.

The engineer has a long (in distance) and short (in time) way to go, in order to meet these qualifications.

In actuality, today's engineer represents a new and

(*Continued on page* 31)

Left: NSPE President Sidney L. Stolte is Minnesota native. Right: Skyline of Minneapolis.

PLANS READY FOR NSPE'S JUNE MEET

MINNEAPOLIS, city of lakes, heart of the great Upper Midwest vacation land, is ready to entertain engineers and their ladies from all over the nation at the 16th annual convention of NSPE, June 14, 15, and 16, 1951.

Minnesota engineers, planning a warm and hospitable welcome for their colleagues from the rest of the United States, are particularly proud that the national president of NSPE is a fellow Minnesotan—Sidney L. Stolte, St. Paul.

Stimulating programs planned for the convention proper will serve as a focal point for a fascinating vacation in Minnesota, land of 11,000 beautiful lakes, where everyone in the family can enjoy sandy beaches, wilderness canoe trips, excellent fishing, hiking along woodland trails through immense stands of virgin timber, and countless other kinds of outdoor recreation.

The preliminary convention program published in this issue of AMERICAN ENGINEER (see page 18) indicates the variety of fare being planned for the convention itself.

The executive committee will gather for its conference a day early, meeting June 13 at convention headquarters in Hotel Nicollet.

The board of directors is scheduled to meet Thursday, and on Thursday, too, to begin the programs of interest to everyone in attendance at the convention.

Mayor Eric G. Hoyer will welcome visiting engineers at the luncheon Thursday noon, June 14. Dr. Walter J. Breckenridge, nationally known director of the fabulous Museum of Natural History at the University of Minnesota, will speak on "Minnesota Wild Life." Dr. Breckenridge is a national authority in zoology, ornithology and herpetology. The luncheon and his address are open to the ladies as well as engineers, though they may wish to attend the first of the special ladies' events—a complimentary tour of Minneapolis' beautiful 22 lakes and 68 miles of winding, picturesque boulevards connecting Minneapolis' famous parks, the most extensive in the United States.

A large committee of Minnesota ladies is planning this tour and the accompanying tea at the home of Mrs. Robert D. Longyear, wife of one of the co-chairmen of the convention committee. Receiving at the tea with Mrs. Longyear will be Mrs. Paul R. Speer, whose husband also is co-chairman of the convention committee, Mrs. Gordon E. Bodien, and Mrs. Sidney Stolte, wife of the national president.

The visiting ladies will return just in time to join their engineer husbands for a special NSPE tour of the General Electric Company train which will have arrived in Minneapolis that day for a three-day stay.

GENERAL ELECTRIC'S "More Power to America" special will be completing a nation-wide tour at that time. It will provide a fascinating "packaged" tour through 31 factories producing electrical apparatus, telling a complete story of their research, engineering, manufacturing and products.

Highlight of the daytime sessions Friday, June 15, will

Your Hotel Reservation
Annual Meeting

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

June 14, 15, 16, 1951

at

Hotel Nicollet—Minneapolis, Minnesota

Please make your own hotel reservations direct to Hotel Nicollet, Minneapolis, Minn.

It is important that you make your hotel reservations as early as possible for the NSPE 16th annual convention in Minneapolis in June. Reservations should be made direct to the hotel in writing by those planning to attend. Usual first-class hotel accommodations are available. Be sure to mention in making your reservations that you are attending the NSPE convention. IT IS URGENT THAT RESERVATIONS BE MADE EARLY!

Write to:
MANAGER, HOTEL NICOLLET
Washington and Nicollet Aves.,
Minneapolis, Minn.

be the luncheon sponsored by Chapters 4 and 5. Speaker will be Dr. John W. Buchta, acting dean of the College of Science, Literature and the Arts at the University of Minnesota, and chairman of the physics department at the university. His subject will be "Romance of a Fact."

Ladies, meantime, will be meeting for a Dutch Treat luncheon at the beautiful Dayton Company Sky Room, from which a bird's eye of all downtown Minneapolis on the bluffs of the great Mississippi River is available. The ladies will go directly from luncheon either on foot or by taxi the few blocks to the Betty Crocker kitchens at General Mills, Inc. Main offices of General Mills are located in Minneapolis and ladies visiting the convention will have an opportunity to tour five Betty Crocker kitchens.

The ladies will return from this trip to the hotel in time to join the engineers for a tour of Lake Minnetonka, one of the best known beauty spots in Minnesota. The lake with its miles of irregular shoreline and shimmering islands, is lined with handsome estates, yacht clubs and country clubs.

The tour will end at Interlachen Country Club, one of Minneapolis' beautiful private golf clubs where refreshments will precede an informal dinner.

Saturday's sessions will provide the top speakers of the week. A panel discussion of the St. Lawrence Waterway is being planned for the morning program with national speakers giving the pros and cons of this vital topic.

While the engineers are considering this subject, the ladies may join special tours to the University of Minnesota. The University, second largest in the United States, is famous for many reasons—its affiliation with the Mayo Foundation for graduate medical study and research; the fact that it is the home of the world-renowned Minneapolis Symphony Orchestra, conducted by Antal Dorati; its Golden Gophers football team.

ENGINEERS and their ladies will meet again at luncheon to hear a national speaker to be announced later. The annual banquet of NSPE is set for Saturday evening, with a United States Senator as the probable speaker. This will be followed by dancing on the Minnesota Terrace, in the Hotel Nicollet.

Visitors to the convention will find much of interest in the Twin Cities and nearby Minnesota vacationland. First known inhabitants of the area were the prehistoric Indian tribes who left burial mounds, still attracting thousands of visitors in St. Paul. Presumably they may have been the ancestors of the North American Indians. The famous Kensington Rune Stone indicated that early Vikings may have visited these parts in the tenth or eleventh century.

Visited first by the white man—after the early Vikings —when early explorers came up the Mississippi river in the 17th century, the Twin Cities grew rapidly, first as logging centers, then as industrial centers, until today they are the industrial heart of the great Upper Midwest.

Minneapolis is a city of more than half a million men and women all living within a short distance of lakes and rivers. Its natural air-conditioned summer atmosphere has made it the summer convention capital of the United States, welcoming more than 100,000 delegates every year. Both cities offer much to the sightseer and vacation-hungry family. Nearby are many interesting scenes—the dells of the St. Croix River, the beautiful drive to the South along the shores of Lake Pepin in the Mississippi River, the granite quarries of St. Cloud, the rich farming land and dairy land of southern Minnesota, the wheat fields of its western counties, the Mayo clinic at Rochester,

Ladies' Program

Thursday, June 14, 1951

9 A.M.

Ladies' headquarters and registration desk opens Parlor "E," Hotel Nicollet.

12 Noon

Luncheon, Engineers and their Ladies.

"Minnesota Wild Life"—Address: Dr. W. J. Breckenridge, Director, Museum of Natural History, University of Minnesota.

1:45 P.M.

Complimentary tour of Minneapolis, City of Lakes, combined with tea at home of Mrs. Robert D. Longyear on Cedar Lake, Minneapolis. All women taking the tour will meet in Parlor "E" at 1:45 P.M., where hostess guides will escort them to busses.

5-7 P.M.

Tour of General Electric Co. Train Exhibit, Engineers and their Ladies.

Friday, June 15, 1951

11:30-1 P.M.

Ladies' Dutch Treat Luncheon, Dayton's Sky Room — Hostesses will be on hand at the Sky Room from 11:30-12 Noon.

2 P.M.

Ladies' visit to Betty Crocker Kitchens, General Mills, Inc., walking distance or by taxi. Tour of five kitchens included and moving picture "Back to Henry VIII," showing progress of cake making. Distribution of recipes.

4 P.M.

Tour of scenic Lake Minnetonka, Engineers and their Ladies.

6 P.M.

Cocktail party and dinner (informal) at Interlachen Country Club.

Saturday, June 16, 1951

10 A.M.

Ladies' Special Tours in private cars to University of Minnesota campus and other scenic spots.

12 Noon

Luncheon, Engineers and their Ladies.

6:30 P.M.

Banquet (dress optional), Engineers and their Ladies. Dancing in the Minnesota Terrace.

Sunday, June 17-Monday, June 18

Tentative post-convention trip for engineers and their ladies to famous North Shore of Lake Superior and inland to world-renowned open pit mines at Hibbing, Minn. Will be scheduled if enough guests are interested.

THE MINNESOTA SOCIETY OF PROFESSIONAL ENGINEERS

Cordially Invites You To Attend

NSPE'S 16TH ANNUAL CONVENTION

in **MINNEAPOLIS, MINN.**

June 14, 15, 16, 1951

Headquarters: Hotel Nicollet

Program

Thursday, June 14, 1951

Board of Directors Meeting.
9 A.M.
Registration Opens.
9 A.M.-12 Noon
Program to be announced.
12 Noon-2 P.M.
Luncheon
Welcome: Honorable Eric Hoyer, Mayor of Minneapolis.
"Minnesota Wild Life"—Address: Dr. W. J. Breckenridge, Director, Museum of Natural History, University of Minnesota.
Engineers and their Ladies.
1:45 P.M.-5 P.M.
Ladies' Complimentary Tour of Minneapolis, City of Lakes, and Tea at home of Mrs. Robert D. Longyear, Cedar Lake, Minneapolis.
2 P.M.-5 P.M.
Engineers Program, to be announced.
5 P.M.-7 P.M.
Tour of General Electric Co. Train Exhibit, Engineers and their Ladies.

Friday, June 15, 1951

9 A.M.-11:30 A.M.
Program to be announced.
12 Noon-2 P.M.
Luncheon Sponsored by Chapters 4 and 5 MSPE.
"Romance of a Fact"—Address: Dr. John W. Buchta, Acting Dean, College of Science, Literature and the Arts, and Chairman, Physics Department, University of Minnesota.
11:30 P.M.-1 P.M.
Ladies' Dutch Treat Luncheon, Dayton's Sky Room.
2 P.M.-3:30 P.M.
Ladies' Visit to Betty Crocker Kitchens, General Mills.
2 P.M.-to Close
Board of Directors session continues.
4 P.M.
Tour of Scenic Lake—Minnetonka, Engineers and their Ladies.
6. P.M.
Cocktail Party, Interlachen Country Club.
7 P.M.
Dinner, Interlachen Country Club (informal), Engineers and their Ladies.

Saturday, June 16, 1951

9 A.M.-12 Noon
NSPE General Session.
Panel Discussion: "The St. Lawrence Waterway," National Speakers.
10 A.M.-12 Noon
Ladies' Special Tours of University of Minnesota campus.
12 Noon-2 P.M.
Luncheon—Speaker to be announced.
Engineers and Ladies.
2 P.M.-5 P.M.
Annual Meeting. Professional Discussion.
6:30 P.M.
Annual Banquet and Dance (dress optional).
U. S. Senator—National Speaker (to be announced).
Engineers and their Ladies.

Sunday, June 17-Monday, June 18

Tentative post-convention overnight trip to famous North Shore of Lake Superior and world-renowned mining area of Hibbing. For engineers and their ladies who are interested.

Meeting

(*Continued from page* 17)

the great shipping harbor at Duluth and rugged beauty of the North Shore drive along Lake Superior, described in another article in this issue.

Everywhere one looks in Minnesota is a lake—and in the lakes are fresh water fish to delight the vacationer—crappies, bass, walleyes, sunfish, trout, and the huge muskies of the northern lakes. Great stretches of virgin pine, resorts that have everything to offer from peaceful quiet in the shade dappled sunlight, to sailing, canoeing, swimming, golf, sports of every kind—this is Minnesota.

Special Trip

PLANS are still being considered for the proposed post-convention trip for visitors to the NSPE convention in Minneapolis in June.

L. G. Barnes, entertainment chairman for the convention, is still anxious to hear from delegates who would like to make this trip.

Tentative plans call for visitors to leave Minneapolis Sunday, June 17, after the convention is over, by bus for the North Shore drive, extending from Duluth to Canada, along the north shore of Lake Superior. The drive is generally considered one of the most beautiful scenic areas in America.

Visitors will proceed along the drive on Sunday, through the virgin pine to Cascade Lodge where they will spend the night ensconced in a comfortable, rustic resort, where Superior's waves dash against the rocks.

On Monday, June 18, they will proceed by bus inland through the game-abundant forests, past beautiful inland lakes to Hibbing, and the world's largest open pit mine. Called "the most stupendous excavation ever dug by man," the mine is the mecca for tourists from all over the world.

Bus fare to the North Shore and Hibbing and return will be $10 for the round trip, with dinner, lodgings and breakfast at Cascade Lodge $7 additional per person. Those interested should notify Mr. L. G. Barnes at the Twin City Rapid Transit Company, 1 South 11th Street, Minneapolis, because whether or not the trip will be held depends upon the number who indicate they would like to participate.

Attend The
Annual Meeting
June 14-16, 1951
Minneapolis

Accent on Activity

PROFESSIONAL ENGINEERS' PLAQUE SHORTAGE TO CONTINUE FOR SEVERAL WEEKS . . . Those who contributed $5 or more to Public Relations fund and are waiting for their PE auto plaques, are asked to be patient . . . metal shortage is reason for lack of plaques and they are being sent out as rapidly as possible . . . **PR Fund now nears $26,000 mark . . .** see story, page 23 . . . Pendray & Co., PR Consultants, who are helping NSPE plan new PR program, conducting preliminary survey with industry . . . **SPEAKING OF PUBLIC RELATIONS:** Article by Executive Director P. H. Robbins on REGISTRATION has been placed in Tau Beta Pi's **Council Bulletin** going to **20,000 plus** engineering students.

EXECUTIVE COMMITTEE WILL MEET MAY 4-5 at President-elect L. L. Dresser's ranch near Tulsa, Okla. . . . Plans for ANNUAL MEETING IN JUNE AT MINNEAPOLIS and new PUBLIC RELATIONS PROGRAM will be high on agenda.

WITH DEFENSE PROGRAM IN HIGH GEAR, LEGISLATIVE MATTERS GAIN IN IMPORTANCE . . . A special **NSPE** committee has prepared a statement for the Department of Defense re: **most desirable procedures for negotiation of contracts between gov't. and architects and engineers** . . . NSPE testified before Senate Armed Services Committee regarding AIR FORCE REORGANIZATION ACT . . . **Society pressed for proper utilization of engineers in service** . . . CHAIRMAN CLARENCE SHOCH, Legislative Committee, visited Washington office to discuss committee program with staff . . . **ATTENTION: SOME MEMBERS REPORT FAILURE TO RECEIVE LEGISLATIVE BULLETIN** . . . Mails have been slow . . . let Hqs. know if you do not get publication.

PUBLICATIONS GOING OUT FROM HQS. AT ACCELERATED RATE . . . 25,000 copies each of "Next Step Registration" and "Engineering As A Career" have been distributed . . . Membership material (Key To A Greater Profession and Man Was Naked) is now being used by more State Societies . . . If you have not used, write for details . . . Revised Constitution and By-laws booklet now being printed . . . will be distributed to States on May 15.

CHAPTER ACTIVITIES COMMITTEE PLANNING NEW BOOK to aid Chapters in preparing more **interesting meetings, etc . . .** Booklet will be colorful and easy to read . . . It is result of Questionnaire sent to Chapters by CA Committee last year . . . **SPECIAL SALARY AND FEES STUDY NOW BEING completed by that Committee** . . . Report to be prepared . . . watch for it.

ATTENTION STATES AND CHAPTERS: An attractive and informative 4' x 5' wood-crated display telling NSPE's story is now available **FOR YOUR USE!** It will add a lot to your **ANNUAL MEETINGS or whenever you can use a display of this type . . . WRITE NATIONAL HQS. FOR INFO.**

ANOTHER FIRST FOR NSPE: Young Engineers Committee, Col. Chester Lichtenberg, Chairman, has list of NSPE members who will act as counselors to young engineers asking for help . . . List will be distributed to this year's 37,587 grads.

UNITY OF ENGINEERING PROFESSION CONTINUES TO BE NUMBER ONE TOPIC . . . Many Chapters are holding unity meetings . . . **See story this issue on page 9.**

ABOVE THE FOG . . .

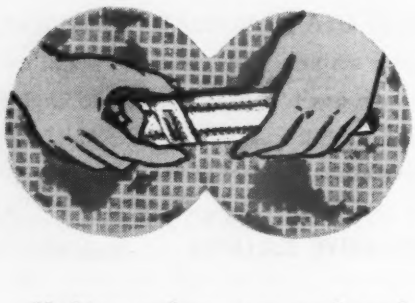
The apprehensions and fears that grip the present age have, at least, one beneficial result. When we are all likely to perish together it comes home to us that if we are to avoid that common disaster, we must make the common effort towards salvation. It is one of the fruits of adversity that we learn how interdependent we are one upon another and if one suffers all suffer. If one survives he has a duty to give some thought to others in less favorable circumstances than himself.

We have now a rather frightful legacy of social problems due to the ruthlessness with which strong, clever, aggressive men carved for themselves a place in the sun justifying their actions under the so-called sanctions of success, freedom, laissez-faire, competition, and other such slogans of the economic world which are assumed to express the virtues of our modern world.

But things are changing rapidly now. What was seen to be a law of nature where the fittest survive and the weakest go to the wall is now regarded as no law at all but pure anarchy. Like religion a man's ability to make wealth or succeed is not a private affair. It merely gives him a greater responsibility towards the earth from which he derives his rewards and towards the people involved (or used) in his career.

A professional man may think he is pursuing his profession with integrity but he finds that his own personal ambition only reaches achievement because he is in a stable, well-integrated society in which he can pursue it. He is completely and utterly dependent as much as his own work is dependent on the laws of the physical world in which he lives. When he builds a bridge he acknowledges the constancy of the law of gravitation, otherwise he would soon be shown a fool. His job is not to build a bridge to make money so much as to build a safe bridge, the most economical bridge, and what is so often forgotten, the most beautiful bridge. His work is always carried on in a moral environment in which personal responsibilities to others are paramount.

But the professional man can go beyond this if he will. When an engineer gives the result of his research for the benefit of all mankind without accepting any personal reward he is answering not only the first call upon himself as a professional man, he is acknowledging the only principle of social progress. One must put more into this world than one takes out of it, otherwise there is no progress. This attitude towards his work which helps him to think in terms of service and sacrifice more than success gives nobility to his profession.



Nothing, perhaps, is so much needed in all the professions as this emphasis on the moral aspect. The man who pours a concrete mixture of four to one when it should be three to one debases his profession. He is equally reprehensible with the commonest thief. He is subscribing to that growing disregard for the laws which safeguard society. One may enter a profession to make money. One may take it up for the pure joy of it. It becomes, however, a noble profession only when one sees in it an occasion to serve and to discover the highest and the best for others.

"God give us men,
Tall men suncrowned,
Who live above the fog
In public duty
And in private thinking."

The Rt. Rev. Godfrey P. Gower,
Bishop of New Westminster

The British Columbia Professional Engineer,
March, 1951

PROFESSIONAL INFLUENCE AND THE SUMMUM BONUM . . .

At a speech delivered to the ASME at their Spring Meeting in Atlanta, Georgia, Mr. Frank H. Neely, prominent Atlanta businessman accused professional and business leaders today of a lack of public-mindedness and failure to exert influence on men in public office for the good of the community. He said further that "less worthy individuals," however, were unceasing in their efforts to further their own interests to the detriment of the community as a whole.

"It is a notable weakness that men of professions and leaders in business and industry fail to develop the language of and the understanding of men whom they have voted into office," said Neely. "They are loathe to discuss with them the problems relating to their offices and make no endeavor to influence them for the good of the community."

Let there be a crisis in the government, or a threat to the government from an outside source, said Mr. Neely, and "automatically patriotism swells up in us, we eagerly offer property, life, lives of our children, in meeting the demands of such citizenship. When the life of a democracy is at stake we act to any limit; nothing counts but the protection of our country. This is active citizenship.

"However, the minute the danger is over we cry for 'our boys to come home'; we fall into the usual lethargy prevalent in peace times; we say that the government can run itself; we fail to exercise our citizenship in any endeavor, we even 'don't trouble' to vote.

"Our allegiance needs no encouragement in time of war, the emotions fan courage and sacrifice; but when that necessity passes, when immediate emergency declines, when danger is over, we take our government for granted; we do not concern ourselves with its functions, and we lapse into civic inactivity."

Mr. Neely called for a widening of the engineering curriculum to equip students with the knowledge and

perspective to discharge their responsibilities as citizens.

Equipped with all the technical knowledge he can digest, he said, the engineering graduate goes out into the world, not only with small knowledge of the structure of the community, but with little or no knowledge of how to get along with people responsible for the maintenance of that structure.

"We speak of the recalcitrant pupil, but before we can blame the young engineer too much, we must be sure that the college has done its part in instructing him in full understanding of the problems and possibilities of associating himself as a citizen with all the political entities under which he must live, and with all the business and social aspects of the everyday life in which he is being thrown."

QUESTIONS FOR TOMORROW . . .

The college student about to graduate must make several important decisions concerning his future. Many, however, do not devote the serious attention that it should require to the selection of their field of endeavor and their employer. As a result, they wander aimlessly down the road into the future.

Let us see, then, what guides we can set up to help the young graduate engineer already traveling down his road toward the future as well as the college student commencing his plans for the future.

There are four major guides. They may be found in the answers to four simple, yet difficult to answer, questions:

1. What do you want?
2. Where can you find it?
3. What do you have to offer?
4. What else do you need to get what you want?

In the answers to these four questions lie the basis for soundly planning your future.

The end result you desire must be your starting point toward successful planning. Let's consider the factors.

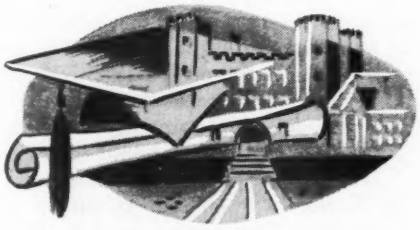
Financial goals. In establishing your financial goals, remember that money is a reward for accomplishment and not an end in itself. Large earnings are for outstanding performance. Only a limited number may achieve them.

Social goals. Being a social animal, it is only natural, and fortunate too, that you will give considerable weight to the social advantages to be found in your job. Recognition and prestige are important too. A title can sometimes give as much personal satisfaction as a raise.

Job Satisfactions and Work Enjoyment. A person generally does his best in work he likes. He expends less effort, too. Many a man has rejected greatly increased financial benefits because the job was distasteful or did not provide job satisfaction. The inner satisfaction that comes from a task well done cannot be overemphasized as an important motivation toward outstanding performance and success. It is a primary source of motivation in any creative enterprise.

Economic Security. In recent years there has been a decided increase in the emphasis on economic security. It has become a prime consideration to many in the selection of a career or job.

Donald K. David, Dean of the Graduate School of Business Administration, Harvard University, decries



this overemphasis on economic security. In an article in the January, 1950, issue of the *Harvard Business Review*, he points out that such overemphasis saps the individual of his freedom, his opportunities, his initiative, and his dignity. Real security "depends upon work and a high level of production," according to Dean David.

Initiative, resourcefulness and adaptability have been our greatest assets as a nation. Each of these factors must be weighed according to your desires or needs. Add a competently administered battery of aptitude, personality, and interest tests to correlate what you can do best with what you want.

Take these tests before you plan your career and temper your wants accordingly. Your college or university may provide this service. If not, there are many competent private personnel testing services that your professors or your employer can recommend. Of course the ideal time to take the tests would be before starting college, but that's not always possible.

The resulting composite picture of what you want will provide the star for which you will aim. It will provide the specifications for your chosen field of endeavor. It will provide the base that, in turn, will aid in determining the additional assets you must develop or create.

In recent years, engineers have successfully moved into such fields as cost accounting, investment, analysis and advice, advertising, marketing and distribution, purchasing, personnel work, human relations, and patent law.

With a proper knowledge of what you want, selection of the proper place to apply your talents would not prove too difficult.

In organizing what you have to offer for presentation to prospective employers, you should study the Man Power Specifications, developed and used with considerable success by the late A. W. Rahn.

These specifications consist of:

First, A resume of the "Types of Work in Which I Would Be of Best Service." This appears on the front page of the specification. It is a definition of your work abilities. It sets forth "What I Can Do" expressed in work terms.

Second, A functional history of the past expressed also in work language. This is the "What I Have Done." It must be fully completed before a start can be made on writing the "What I Can Do" section. It includes education, travel, hobbies and interests, business experience, military record, and personal development.

What else you need is the difference between your own inventory—what you have to offer—and the end result you desire—what you want. Remember, you must continue to grow. If for no other reasons than this, it is necessary that you continue your personal and professional development throughout your business life.

You must carefully plan and carefully execute your plans for the future if you are to gain the maximum benefit from the advantages which industry and the schools place at your elbow. Your future success will be directly proportional to your success in developing the answers to the four basic questions, and in adjusting these answers periodically to meet your changing needs.

You must point toward some definite goal. You must measure your abilities against your aspirations. Then you must make up the differences by diligent work and study if you expect to attain your goal in the time available.—*T. A. Marshall, Jr., Mechanical Engineering, March,* 1951.

BOOK LOOKS

Title: Behind Closed Doors.

Author: Rear Admiral Ellis M. Zacharias, U. S. N. (Ret.).

Published by: G. P. Putnam's Sons, New York. Price: $3.75.

If Admiral Zacharias is correct in his statement that, "the Politburo unanimously agreed, in extraordinary session on January 28, 1949, to accept as immediately valid Levin's thesis that war between capitalism-imperialism and communism is inevitable. At once they ordered the whole vast Soviet state to gird itself for the showdown between the United States and the U.S.S.R.", then the administration foreign policy in Asia becomes suspect.

Although the author marshals an impressive array of intelligence documents showing Russia's unmistakable intentions to destroy our way of life, and our rather bumbling efforts to organize a defense, the most insidious peril to our freedom is tucked away in a short paragraph or two and may be missed by the casual reader. In the chapter entitled "The Great Washington Dilemma" the Admiral discusses governmental secrecy. One would hardly expect the one time deputy head of the Office of Naval Intelligence and the American Newspaper Publishers Association to have the same viewpoint on government secrecy but, surprisingly, that is the case. Zacharias says "In a genuine and truly popular democracy like ours, secrecy must have a clearly defined meaning and place. In its final analysis it is the gravest challenge to the institution of democracy itself. Who is to keep what from the people? And how can the people's influence be sustained on the intentions and decisions of their government if vital information and explanations are deliberately withheld from them? Can a democracy survive as a democracy in an atmosphere and mood of secrecy?

"Because of the spread of official secrecy through our administration there is no intimate link between the people of America and their own security apparatus. In this twilight our people develop a feeling of insecurity —chiefly because they have no means of ascertaining how secure they really are."

The author goes on to say "Perhaps we would be more charitable and complacent about our government's major failure to take the American people into its confidence were we convinced that it is due merely to a justifiable concept of exaggerated secrecy in a real emergency. Unfortunately we are not satisfied that this is the case. We have reason to fear that frequently secrecy is motivated by a desire to cover up gripings and ignorance, to conceal the absence of clean-cut ideas and imagination, to gloss over the lack of policy, to hide timidity and opportunism, or, worst of them all, to conceal evidences of blunders."

The recent blast by the American Newspaper Publishers Associates against government information bureaus covers exactly the same ground and makes one wonder if "freedom of the press" has become another American legend rather than a continuing reality.

As you can see from the passages quoted, Admiral Zacharias does not pull his punches. From the mass of intelligence sources available to him he has worked out the pattern of Russia's moves in the period 1945-50 and her probable course in the future. He also presents a 10-point program for peace which America should follow.

The last few pages briefly touch on the Korean war and the statement is made that "the professional soldier proves again and again that he is incapable of comprehending the new kind of war the Soviet Union is waging against his outdated forces."

When the Admiral sticks to intelligence matters, he is on firm ground, but when he ventures into policy he forgets that sailors may also be professionals.

Other Recently Published Books:

SIMILITUDE IN ENGINEERING. *By Glenn Murphy.* Published by The Ronald Press Company, New York. Price, $7.

ENGINEERING MECHANICS. *By Timoshenko and Young.* Published by the McGraw-Hill Book Company, New York. Price, $5.50.

MOTION AND TIME STUDY. *By Marvin E. Mundel.* Published by Prentice-Hall, Inc., New York. Price, $6.65.

STEAM TURBINES. *By Edwin F. Church.* Published by the McGraw-Hill Book Co., New York. Price, $6.

FUNDAMENTALS OF QUANUM MECHANICS. *By Enrico Persico.* Published by Prentice-Hall, Inc., New York. Price, $8.

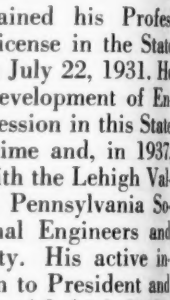
OUR AUTHORS

Clarence T. Shoch, P.E., (Unity For What?—Page 9), Mr. Shoch is a graduate of Drexel Institute of Technology, 1924, B.S., in Electrical Engineering and a member of Tau Beta Pi.

Employed July 7, 1924 by Pennsylvania Power & Light Company as Instrument Man; later, Test Engineer, Field Engineer, Boiler-room Engineer, Plant Betterment Engineer, Industrial Sales Representative and, since 1941, Manager, Industrial Sales Department. In his present position, Mr. Shoch is in charge of all Pennsylvania Power & Light Company's technical and sales activities concerning power supply to and utilization by industrial customers.

Mr. Shoch obtained his Professional Engineer's license in the State of Pennsylvania on July 22, 1931. He has followed the development of Engineering as a profession in this State closely since that time and, in 1937, became affiliated with the Lehigh Valley Chapter of the Pennsylvania Society of Professional Engineers and the National Society. His active interest advanced him to President and later State Director of Lehigh Valley Chapter; to President of the State Society, and Director of the National Society. He is now Chairman of the Legislative Committee of the National Society.

Robert McFarland Gates, P.E., (An Engineer Reports On UNESCO —Page 12), was born in Iowa. He graduated with a B.S. in M. E. from Purdue in 1907, and was awarded a doctorate in 1944. He was president of the ASME in 1943 and 1944, and is a member of NSPE along with many other organizations. From 1943 to 1945 he was a member of the Engineers Joint Council, and is now just completing a term of office as that group's representative on the National Commission for UNESCO. He is president of the Air Preheater Corp., N. Y. C.



Public Relations Fund At $26,000

C. G. ROUSH, Chairman of the NSPE Public Relations Committee, has announced that the Public Relations Fund-Raising Drive, which is now nearing completion, has accumulated a total of more than twenty-six thousand dollars.

"It is indeed a pleasure for the Public Relations Committee to announce to the members that we have succeeded in raising nearly twenty-six thousand dollars for our four-point public relations activity. As I pointed out to you in a story in last month's AMERICAN ENGINEER, we are to be assisted in carrying out our program by Pendray and Company, public relations consultants. The wheels are already turning, and we hope to be able in the very near future to outline to you in detail just what form our public relations program will take. An extensive survey is now underway by the Pendray people, and it will be used to help us plan our future steps," Roush said.

The announcement by the Society committee on the amount of money raised through the campaign came in the fifth month of the program to raise funds. In November of last year, the Fund-Raising Drive was announced and the first active step taken was the mailing of a solicitation mailing piece to the membership. The mailing met with immediate success, and contributions deluged National Headquarters. A second mailing piece was mailed after the first of the year and it also created much response.

Additional Contributors to the P. R. Fund

ARIZONA
Walter A. Burg
Edwin Walter Mills

CALIFORNIA
Elbert L. Brentnall
Arthur C. Bullen
Ralph K. Daugherty
L. H. Hendrixson
Bertram H. Hirsch
J. Ray McKinney
Douglas T. Robertson
Fritz Strauss

COLORADO
Eugene D. Ayer
Karl F. Hehl

CONNECTICUT
Luthaer W. Murphy

DISTRICT OF COLUMBIA
Robert C. Krack

FLORIDA
Fletcher H. Burke
R. M. Garth
Joe K. Merrin

GEORGIA
Sam L. North
James Moran Roberts
T. D. Symmes
K. D. Wyant

IDAHO
William L. Hilton

ILLINOIS
John L. Burns
Wendell M. Carlson
Sidney I. Cole
L. A. Des Autels
John Dolio
D. J. Donovan
Martin M. Grady
Ralph R. Hodges
Lawrence H. Jacobson
Stanley Knetsch
Larry J. McGonigal
John Proctor
John R. Skuba
J. P. Wetherby

INDIANA
R. P. Barnes
Charles E. Day
Roland C. Fitch
William H. Goetz
Donald Ray Hamilton
Paul H. Johnson

KANSAS
Neil B. Rogers
Guy M. Shelley & Guy M. Shelley, Jr.

MASSACHUSETTS
Charles F. Buckland
W. V. Burnell
Walter L. Calder
William N. Dreyer
Harold S. Endicott
James S. Goff
Howard C. Lilly
Nelson E. Smith
Almon E. Spaulding
Robert A. Spence
John W. Thompson
Norman K. White

MICHIGAN
W. E. Barnum, Jr.
H. H. Bickel
John S. Blossom
A. B. Buchanan
A. R. Hellwarth
James H. Krick
William Joseph Thome

MINNESOTA
John C. Adams
Lee R. Boyd
Richard P. Braun
Herbert C. Dale
Glen Ellinger
E. H. Harding
Leonard F. Harris
Percy C. Hosfield
Lowell H. Korstad
Lester D. Lee
Edward R. Lorens
G. A. Meskal
Armand P. Mueller
Robert Painther
G. K. Preus
N. T. Rykken
Joseph Seidel
Arnold M. Steffes
Douglas H. Stewart
John H. Swanberg
H. T. Swanson
Alan Wynnemer

MISSOURI
Elmar Lee Anderson
Murle C. Barnes
A. R. Baron
Thomas P. Beggs
Marshall Bliss
R. L. Coleman
W. E. Ralls
Merle W. Smedberg
George F. Weaton, Jr.
Clarence H. Weiser

NEW HAMPSHIRE
Joseph W. Moore

NEW JERSEY
Horace L. Bickford
George Cawley
Frank P. Cooper
John B. Farr
Frederick S. Frambach
Ambrose J. Gegan, Jr.
Paul D. Germond
Henry Ness
Henry O. Pond
Byron J. Prugh
Chester E. Rose
Arthur H. Stetser

NEW MEXICO
Edward T. Cooney
James A. Mahoney
Henry E. Samson
J. A. Wheelwright

NEW YORK
Philip L. Alger
Gerard J. Brinkman
Demosthenes John Critzas
Frank J. Durkin
K. Eugene Fichtner
Arthur C. Firl
Charles W. Franklin
Max F. Freund
Donald A. Gunn
Louis Janota
Charles Jellinek
Thos. C. Rathbone
Ralph T. Roberts
J. A. Salvato, Jr.
William A. Schell
Samuel Semble
James R. Stover
P. Schuyler Van Bloem
William Vermeulen
John B. Walsh
Frank J. Wells
Isle R. Wisner
Ernst Wirtsen
Oreg Yadoff
J. L. Zehner

OHIO
Robert N. Bennett
Roy F. Dehn
Hugh C. Downer
Robert W. Duis
Henry Edward Eisett
Chester W. Haenny
Ira C. Hebbard
E. J. von der Heide
Oscar R. Jacobs
A. A. Koepfer
Donald E. Krapp
Anthony A. Miele
Harry M. Nobis
John T. Odbert
Carl D. Price
Leslie J. Reardon
Jeffers Richardson
Edwin Wade Sankey
C. F. Sweeney
E. Hodgens Tilton
Kurt R. Weise
Edward J. Werner
Donald R. Whitacre
F. A. Wissel
Irvine Andrew Yost
Luther K. Zerbe

OKLAHOMA
Lloyd S. Dillingham
C. F. Koenig
W. T. Milam
Erle K. Ramsey
W. H. Spicer

PENNSYLVANIA
Samuel Abramson
Carl O. Anderson
William A. Annick
E. E. Appel
David W. Bainbridge
Jefferson C. Bedsole
M. F. Behar
Robert W. Bell
Robert A. Blackburn
Charles H. Bode, Jr.
Harry Bodenschatz
George Boon
Clarence A. Bradley
Allen D. Brandt
Earle J. Breneman
John Briggs, Jr.
John Brinda, Jr.
Gibson E. Brock
J. D. Carpenter
John G. Carr
C. Frank Class, Jr.
Frank Campbell Coe
Glen Moore Comstock
George R. Connor
Francis J. Cooney
J. M. Crockin
Howard L. Davis, Jr.
Dan S. Deaver
Robert George Dorio
R. M. Douglass
Alexander Dzubay
James Harold Eagen
Joseph R. Farrell, Inc.
L. P. Fessler
J. Robert Fleming
William G. Flurer
Leonard M. Fraivillig
Hadley F. Freeman
Clifford H. Frick
John D. Fridy
Morris Fruchtbaum
Joseph B. Gaffney
Robert A. Galbraeth
Karl L. Gatter
Ernest O. Gerlach
Silas Gersmann
Edward J. Glinske, Jr.
Perry J. Goldman
Thomas E. Gray
Edgar P. Grim
Salvatore S. Guzzardi
Reese W. Hafner
Joseph T. Halpin
Clarence O. Hartman
Jack Paul Hartmann
J. Ralph Heinz
J. Thompson Henry
J. Paul Hively
William S. Hobbs
Rudolph Hofer
Milton A. Hopf
Walter A. Horko
C. M. Houck
Charles E. Jordan
B. J. Kaiser
Francis D. Kaiser
J. F. Kindl
Frank R. Knowles
Albert H. Koch
E. G. Kort
A. N. Krieger
Clarence M. Krug
Joseph J. Kudirka
David L. Kun
Thos. J. Landau
Henry J. Larsen
Harry B. Lentz
George M. Levinson
Thomas J. Lewis
W. F. Lloyd
Peter P. Lombardo
Carl J. Long
Alexander W. Luck
George R. Lynn
Ellsworth C. Machin, Sr.
Albert W. Marshall
James J. McBrearty
Joseph R. McCorkle
J. L. Medlar
George W. Morris
J. A. Murray
Rudolf F. Nagel
Frank Nagy
J. W. Neff
Albert J. Nesbitt
Ezra K. Nicholson
Fred L. W. Norton
Robert E. Oberholtzer
Harold W. Pletcher
Alexander V. Polson
Harry Elwood Potteiger
James W. Price
Ernest R. Rechel
Henry L. Reese
Elmer B. Ressler
F. Ward Reighard
Lloyd C. Ritchie
W. P. Rodgers
E. J. Rollings, Jr.
Kenneth E. Sandt
Louis E. Sauer
Timothy J. Scanlon
Richard B. Schulz
Earl D. Schwartz
Joseph W. Schwartz
William N. Shoch
William A. Siefirt
William P. Simpson
Frank J. Snyder
W. Earl Snyder
Walter E. Spotts
John G. Stauffer
Raphael Stein
Ramsey Stobie
Reinhold F. B. Thieme
L. Foster Tierney
Earl W. Tipton
K. Raymond Titlow
Robert M. Totten
Alfred Ames Townsend
S. W. Traylor, Jr.
A. H. Vannauker
Stephen Vauda
August Velthaus
E. A. Vitunac
Warren B. Warden
Lawrence E. Weber
Richard G. Weston
Arthur L. Wiesenberger
W. Leslie Wilson
John G. Wittman, Jr.
Alfred Wurster
Harold J. Yates
Felix Zielinski

RHODE ISLAND
Francis X. Asselin, Jr.
Roland A. Gignac
Richard A. Phelan
John W. Thompson

SOUTH DAKOTA
Lawrence H. Jacobson

TENNESSEE
G. Drennan Albrecht
Hobart M. Brock
Franklin Cassen
A. W. Jurgens

TEXAS
H. E. Bovay, Jr.
Maurice Coburn
C. C. Hudspeth
C. W. Johnson
R. W. Kotzebue
August H. Meinrath
Herbert K. Rigsbee
Fred T. Stafford

VIRGINIA
E. B. Boynton

WEST VIRGINIA
George F. Jenkins
E. W. Lyon

WISCONSIN
George L. Cadenhead
D. F. Culbertson
Lester D. Lee
Kenneth F. Lemke
Walter A. Peirce
Bernard O. Stieg
Robert C. Strassman
James S. Whitney

TO THE *Editor*

The Seaway . . .

Dear Editor:

This letter is in reference to an article in the April, 1951, issue of the AMERICAN ENGINEER entitled "From Duluth To The Sea."

The statement is made at the bottom of page 4 of the AMERICAN ENGINEER that you are not responsible for opinions expressed in signed articles. May I ask who is the author of the unsigned article to which I have referred above?

The article on the St. Lawrence seaway is indeed a very subtle piece of propaganda and to put it mildly contains a number of statements which are certainly misleading if not outright attempts at dishonesty.

Nowhere is it pointed out that the seaway will be frozen up for about one-half of the year. Near the top of page 8 the following statement is made: "At the present, most of our imported ore comes from South America." May I ask how much ore comes from South America at the present?

At the top of page 8, second column, the statement is made that the railroads figure they will lose out on coal shipments if New England is supplied power from the proposed hydroelectric plant. How much power will New England be supplied with from the proposed St. Lawrence development, and who says so? How much of the fuel coal for power that comes to New England is shipped by rail and how much by water?

On the same page and same column, "The year round evenness of the flow is almost as important" is commented upon. What are the variations in the flow of the St. Lawrence, taking into consideration what happens under freezing conditions as well as variations due to change in lake levels, storms, etc.

The worst statement of all and made as a statement of *fact* reads as follows: "It's a *fact* that power is so high in the northeastern United States that industries consider moving out, and new firms refuse to move in." For more than a year the New England Council has offered a cash prize for anyone who can show that a single industry has moved out of New England on account of cost of power and so far there have been no cash prizes awarded or claimed.

We have ourselves spent a substantial amount of our money to determine what the cost differential in power is in the eastern and southeastern United States because we have clients all over the United States and more particularly in the Southeast for certain kinds of industry we deal with. I am sending you a copy of one analysis of comparative power costs.

By way of closing, let me say that I am not for or against the development of the St. Lawrence and if it could be shown that its development is for the good of the country I would certainly try to assist in getting the project underway. As an engineer I believe such matters should be determined on their merits and not by misleading propaganda. About 75 per cent of the work our firm does is outside of New England.

I am disappointed in finding such an unsigned article as I am writing about in the AMERICAN ENGINEER, which represents the National Society of Professional Engineers, of which I am a member.

W. F. UHL, P.E.
Boston, Mass.

► This staff-prepared piece was written we firmly believe, with all the objectivity possible within the confining limits of two-thousand words. To treat such a multi-angled subject as the Seaway in complete detail, would have filled volumes, and the only intent of the story was to present both sides of this highly controversial issue as completely as possible in the limited space available. Needless to say, our writers, who analyzed much material and interviewed many proponents and opponents before the piece was written, tried diligently to present a factual article with no wish to propagandize or be "dishonest."

Now, to answer Mr. Uhl's remarks in turn. The statement is made that "nowhere is it pointed out that the Seaway will be frozen up for one-half of the year." Attention is directed to paragraph 5, page 8. It reads as follows: "Those against proclaim that the Seaway is frozen over five months of each year and out of action. Those in favor are hard pressed to refute that statement so they point out instead that for sixty years the U. S. steel industry has depended almost entirely upon ore shipped down the Great Lakes in the open season."

How much ore comes from South America at present? The U. S. Department of Commerce states that 3,650,401 net tons were imported from South America during 1950. U. S. Steel imported most of this.

How much power will New England be supplied from the development, and who says so? This figure is mentioned in paragraph 8 of page 8. General Lewis A. Pick, Chief of Engineers, U. S. Army, stated in his testimony before Congress, that 5.8 billion kilowatthours of electricity will be available each year.

Next, how much fuel coal for power that comes to New England is shipped by rail and how much by water? Answer from Department of Commerce: Railroads—4,573,850 net tons; Water—7,597,709 net tons.

Relative to the question regarding flow, perhaps another quote from General Pick will serve to answer. He says in his testimony before Congress: "The St. Lawrence River is unique among the rivers of the world in that the tremendous storage capacity of the Great Lakes regulates its discharge to produce a relatively constant flow. The ratio of the maximum to minimum flow is only 2.2, as compared to a ratio of about 45 for most rivers of comparable size. Observed mean monthly flow for an 80-year period is 237,000 cubic feet a second, varying from a maximum of 314,000 to a minimum of 144,000. Total drainage area above the foot of the International Rapids Section of the St. Lawrence at St. Regis, New York, is approximately 303,000 square miles, of which 95,000 square miles are water surface."

Now, as to comments regarding New England industry. The article was based, among other sources, upon data from a speech by Senator George D. Aiken, Republican, of Vermont, appearing in the *Congressional Record* as an extension of remarks by Senator Charles W. Tobey, Republican of New Hampshire.

Said Senator Aiken: "Even as late as 1909, New England produced nearly 13 per cent of the total value of manufactured products of the whole country. Twenty years later, in 1929, a year of prosperity, the contribution of New England to the total manufacturing output of the Nation was only 9 per cent. Ten years later, in 1939, the proportion of New England's contribution was down to 7 per cent." At another point he goes on to say that, ". . . the people of New York and New England, except Connecticut, pay the highest electric rates anywhere in the country."

Incidentally, Herbert Hoover once said: ". . . its completion (St. Lawrence Seaway) will have a profoundly favorable effect upon the development of agriculture and industry throughout the Midwest. The large by-product of power will benefit the Northeast."

Possibly in the story we could have been more explicit on this point by emphasizing that power costs *alone* were not responsible for New England's loss of industrial percentages.—*Editor.*

Dear Editor:

On page 8 of the April, 1951, issue in the article on "From Duluth to The Sea," it is stated, "Those against proclaim that the Seaway is frozen over five months of each year and is out of action. Those in favor are hard pressed to refute that statement . . ."

Briefly, the answer to that statement is "So what!" One-third of the total water-borne commerce passing our Atlantic, Gulf, Pacific, and Great Lakes ports goes through the Great Lakes ports that are closed for the same winter periods that the Seaway would be inoperative because of ice conditions.

Further, the site of the Seaway works in the International Rapids Section, which in the location most writers have in mind when they mention this argument, is further south and in a region of less severe winters than Sault Ste. Marie, the site of the improved St. Marys River channels and the locks that comprise the waterway with the heaviest tonnage of any in the world. Its annual tonnage is over twice that of the Suez Canal, the next busiest.

HARLAND C. WOODS,
Lt. Col., C. E., Ret.
Orlando, Fla.

Around The Nation With Our Members

Nevada Chapter Meets Recently In Las Vegas

The Southern Nevada Chapter of the Nevada Society met on April 6 at the Hotel Thunderbird in Las Vegas. President A. T. Newell presiding.

A seven-point symposium was presented by members of the Chapter on "Why Belong?", giving the reasons why engineers should belong to an all-inclusive professional society.

Mr. William S. Bennett, Western Sales Manager of the Corning Glass Company, gave the group a very interesting talk on the manufacture of glass.

Colorado Engineers Hear Galbreath Discuss Patent Law

The Professional Engineers of Colorado met at the Argonaut in Denver recently to hear Mr. R. H. Galbreath, Denver Patent Attorney, discuss "Patents and the Engineer."

Galbreath emphasized that patents are important to modern engineering as shown by only four corporations having been issued 819 patents in 1949. In addition, he gave four strong reasons why engineers, to be most effective, must be familiar with patent law and use the facilities of the U. S. Patent Office.

Meetings Mark Active Month For Pennsylvania Chapters

A regional conference and a special Chapter meeting have made the last few weeks particularly busy ones for several Chapters of the Pennsylvania Society.

The Central Pennsylvania Regional Conference with the Anthracite, Central, Lebanon, Lincoln, Northeast, Reading, Susquehanna and Harrisburg Chapters of PSPE participating, was held on April 7 in Harrisburg at the Y. M. C. A.

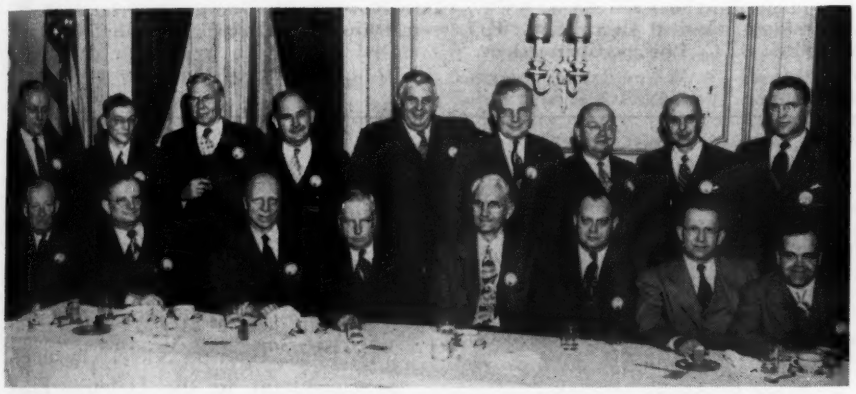
The morning session was devoted to a general assembly presided over by Pennsylvania President R. A. Blackburn, P. E. Paul H. Robbins, Executive Director, NSPE, addressed the group on "What NSPE Is Doing," and John T. West, Jr., Executive Secretary, PSPE, spoke on "What PSPE Is Doing." Mr. E. L. Dryer, P. E., also spoke on "The Three Legged Stool."

After a brief recess, group meetings were held on "Planning Chapter Programs," "Publicizing Our Activities," "Interesting, Obtaining and Holding New Members," "A Definite Program for Affiliates" and "Ethics and Practices."

After a recess and luncheon, the group meetings were continued and a question and answer period was held.

On March 14, the Reading Chapter of the PSPE held a Past Presidents Night at the Wyomissing Club in Reading with the Chapter's Past Presidents as their guests. Included among the Past Presidents were: Frederick H. Dechant, 1936; E. M. Frankhouser, Sr., 1937; Allen W. Reid, 1939; Leslie D. Lamont, 1940; Augustus S. Wertz, 1941; Francis A. Heine, 1942; I. W. Blemker, 1943; Robert S. Chubb, 1944; Edgar D. Sibley, 1945; Howard F. Rickenback, 1946; John G. Carr, 1947; J. Ralph Heinz, 1948; Frank X. Ratajczak, 1949; Paul E. King, 1950 and Lawrence E. Weber, 1951. Of the fifteen Past Presidents, all were present with the exception of Bruce M. Alexander, 1937, who was unable to attend due to illness.

PAST PRESIDENTS' NIGHT IN READING



Shown above are Past Presidents of the Reading Chapter, PSPE, as they met on March 14 for a special meeting. They are, left to right, seated: Frederick H. DeChant, 1936; E. M. Frankhouser, Sr., 1938; Allen W. Reid, 1939; Leslie D. Lamont, 1940; Augustus S. Wertz, 1941; Francis A. Heine, 1942; I. W. Blemker, 1943; Robert A. Blackburn, President, PSPE. Standing: Leroy F. Christman, State President, 1945 and 1946; Robert S. Chubb, 1944; Edgar D. Sibley, 1945; Howard F. Rickenbach, 1946; John G. Carr, 1947; J. Ralph Heinz, 1948; Frank X. Ratajczak, 1949; Paul E. King, 1950; and Lawrence E. Weber, 1951. (Story at right.)

Milwaukee Chapter Holds Panel On P. E.'s Personal Growth

The Milwaukee Chapter of the Wisconsin Society met on April 10 at the Engineers Society Building in Milwaukee to hear a panel discussion on the subject, "Are You A Real Engineer?"

A panel of fifteen speakers led by Mr. E. W. Seeger, P. E., Past President, WSPE, presented three minute discussions of the rules of ethical conduct adopted by the Wisconsin Society.

Radio Telephony Subject Of Capital Chapter, ISPE, Meet

The Capital Chapter of the Illinois Society held a meeting on March 27 at the American Legion Home in Springfield.

Illinois Bell Telephone Company representatives presented a program entitled "Recent Developments in Radio Telephony" and local chapters of the AIEE and the Illinois Association of Highway Engineers were given special invitations to attend the meeting.

STATE PRESIDENTS ATTEND PENTAGON CONFERENCE

Pictured above are the delegates to the recent Presidents' Conference who attended a special meeting with Defense officials at the Pentagon. Left to right, first row: Lt. Commander Clarence Cisson; NSPE Executive Director Paul H. Robbins; A. T. Brown, South Carolina; R. A. Sovik, New York; NSPE Past President, Alex Van Praag; R. A. Blackburn, Pennsylvania; NSPE President-Elect L. L. Dresser; S. L. Stolte, President, NSPE; Fred G. Fellows, Oklahoma; W. D. Williams, Arizona; Alberto Hernandez, Puerto Rico; Col. Ben LeBailey; Second Row: H. P. Mathieu, Texas; R. B. Allen, Treasurer, NSPE; K. D. Harrington, California; Vincent Dimase, Rhode Island; Earl N. Holm, Vice-President of Western Area, NSPE; A. F. Beck, Business Manager, American Engineer; K. E. Trombley, Editor, American Engineer; Dean Wilson, Missouri. Third Row: J. A. Oakey, North Dakota; L. C. Gates, West Virginia; H. W. Clark, District of Columbia; C. V. Waddington, Kansas; H. L. Jones, Oklahoma; C. T. Chave, Massachusetts; R. C. Clark, Wisconsin; V. E. Gunlock, Illinois; J. A. Rives, Virginia, V. J. Van Lint, New Mexico. Fourth Row: J. L. Bahr, Delaware; E. A. Anderson, Florida; Ross B. Johnston, West Virginia; Col. Chester A. Lichtenberg, Indiana; L. E. Easley, Indiana; L. T. Klauder, New Jersey. Fifth Row: G. W. Clark, Ohio; E. L. Mathes, Idaho; W. L. Hinderman, Minnesota; J. H. Lopez, Georgia; Loren Adams, Colorado; Frank Beckman, Arkansas; G. J. Micastro, Vice-President, Northeastern Area, NSPE. Sixth Row: A. M. Gompf, Maryland; R. B. Rice, North Carolina; J. D. Coleman, Vice-President, Central Area, NSPE; E. Larsen, Ohio; S. M. Batori, Washington; C. C. Roush, Vice-President, North Central Area, NSPE; J. G. Phelan, Connecticut.

Joint Meeting Held By Three New York SPE Chapters In Albany

The Rensselaer, Schenectady and Albany County Chapters of the New York State Society were joint hosts at a meeting held on April 17 at the Joseph Henry Memorial Hall in Albany. The subject of the meeting was "Symposium on Stream Pollution and Its Abatement," and the meeting was open to any citizens of the Mohawk Valley as well as political, civic and industrial leaders of the area.

Included on the program were the following topics and speakers: "The Social Aspects of Water Pollution," Morris M. Cohn, P. E., Sanitary engineer for the city of Schenectady; "The New York State Legislative Aspects," The Honorable Oswald D. Heck, Speaker of the Assembly; "The Effects of Stream Pollution on Public Health," Earl Devendorf, P. E., New York State Board of Health; "New York State Pollution Control Program," A. F. Dappert, P. E., New York Water Pollution Control Board; "The Effects of Stream Pollution on Wildlife," Dr. William Senning, New York State Conservation Commissioner; "The Role of New York Industry in Combating Pollution," Martin Hilfinger, President, Associated Industries of New York State, and "The Role of Municipalities in Combating Stream Pollution," the Honorable Mayers Corning (Albany), Fitzgerald (Troy), and Begley (Schenectady).

South Carolina Chapter Hears Address On Society's PR Drive

Mr. W. Reese Hart, Chief of Development, South Carolina Research, Planning and Development Board, addressed a meeting of the Piedmont Chapter of the South Carolina Society at the Ottaray Hotel in Greenville on April 9.

Mr. Hart spoke on the many advantages and resources, natural and developed, which South Carolina, through the Board, has so successfully extolled in its public relations drive.

Progress of the State, he said, is reflected in statistics which reveal that South Carolina is one of the highest in the percentage of industrial increases in the United States over the past few years.

Treadway Of Georgia Appointed As Defense Power Consultant

Appointment of Mr. T. Foley Treadway, P. E., Georgia Society member, as consultant to the Defense Electric Power Administration, was announced recently by Secretary of the Interior Oscar L. Chapman.

A resident of Decatur, Georgia, Mr. Treadway was graduated from the Georgia Institute of Technology in 1935 as an electrical engineer. Treadway is at present an official of the Southern Engineering Company, Atlanta, Georgia, with which he has been connected since his discharge from the Army as a major in the Coast Artillery in 1946.

Prior to entering the service in 1942, Mr. Treadway was employed by the Georgia Power Company and later the H. B. McCrary Engineering Corporation of Atlanta. Treadway's service with the Defense Electric Power Administration is on a part-time basis, and he will maintain his present connection with the Southern Engineering Company.

Ohio Society Holds Seventy-Second Annual Convention In Toledo

The Seventy-Second Annual Convention of the Ohio Society was held at the Commodore Perry Hotel in Toledo on March 29, 30 and 31.

The convention opened on March 29 with a Presidents and Secretaries Conference, Ohio President George W. Clark presiding, followed by a tour of exhibits with an informal luncheon. In the evening, the Trustees' Dinner was held, with an address by guest speaker Dr. Asa S. Knowles, President of the University of Toledo, on "The Role of the Engineer in the World Crisis." A party for trustees and exhibitors concluded the day's activities.

Friday afternoon was devoted to functional group meetings, and a Monte Carlo Party was held in the ballroom of the Commodore Perry Hotel later in the evening.

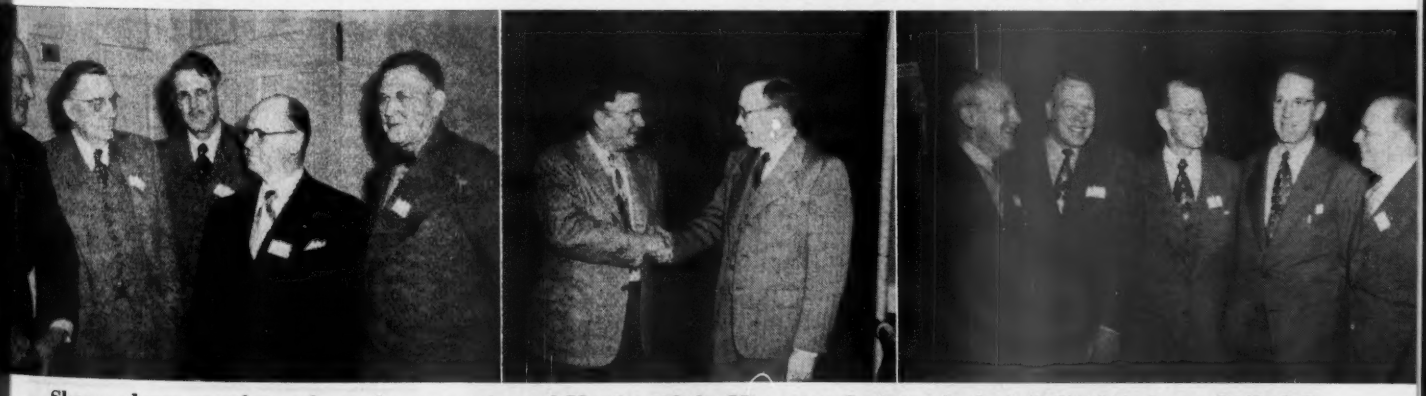
On Saturday afternoon, two simultaneous group meetings were held; one a general session and the other a meeting of the OSPE Student Council, Robert F. Kail, Ohio University, presiding. At the general session, a round-table discussion was held with NSPE Executive Director Paul H. Robbins, P. E., as moderator. In addition, Mr. L. L. Dresser, NSPE President-elect, addressed the group on "Recognition Through Service." The agenda for the Student Council Conference included an address by Mr. Joseph H. Nuffer, President of the Air-Way Electric Appliance Corporation entitled, "An Industrialist Looks at Engineering," and Mr. Robert P. Lewis, Executive Engineer, Dana Corporation, who spoke on "Engineering Philosophy."

OHIO SOCIETY MEETS IN TOLEDO

Pictured at top left are some of the men who will serve as hosts to OSPE in Cleveland in '52: Front: T. F. Hindman, Raymond A. Freese, G. Brooks Earnest, Cleveland Chapter president, Paul A. Harlamert, 1950 Cleveland Chapter president, William C. Kammerer, Frank C. Tolles. Back, left to right: T. J. Kauer, A. T. Miller, L. Drasler, J. O. Barrett, James Shafer, H. B. Baty, Fred Gaub, D. S. Munn, Norman Wilke, and G. V. Fleck. Photo top right shows, left to right: Paul H. Robbins, NSPE Executive Secretary; A. F. Plant, Michigan Society President; L. L. Dresser, NSPE president-elect; John Coleman, NSPE vice president; Allison C. Neff, OSPE national director. Bottom left: Displays of Engineers' Week clippings and articles behind Ohio Engineers' Placement Service booth. Left to right: W. G. Stanton, 1950 OSPE treasurer and Placement Service Manager; Miss Charlotte Patterson, Placement Service secretary; Lloyd A. Chacey, OSPE executive secretary; George E. Miller, president, Ohio Northern Chapter; F. L. Page, president, Lake Erie Chapter. Shot bottom right shows Marker purchased by Ohio Society of Professional Engineers to mark restoration of locks at Lockington, Shelby County, Ohio. Left to right are Toledo University Student members: Marilyn Belinske, Fred Klag, Patricia Flick, and Elmer Moenter.

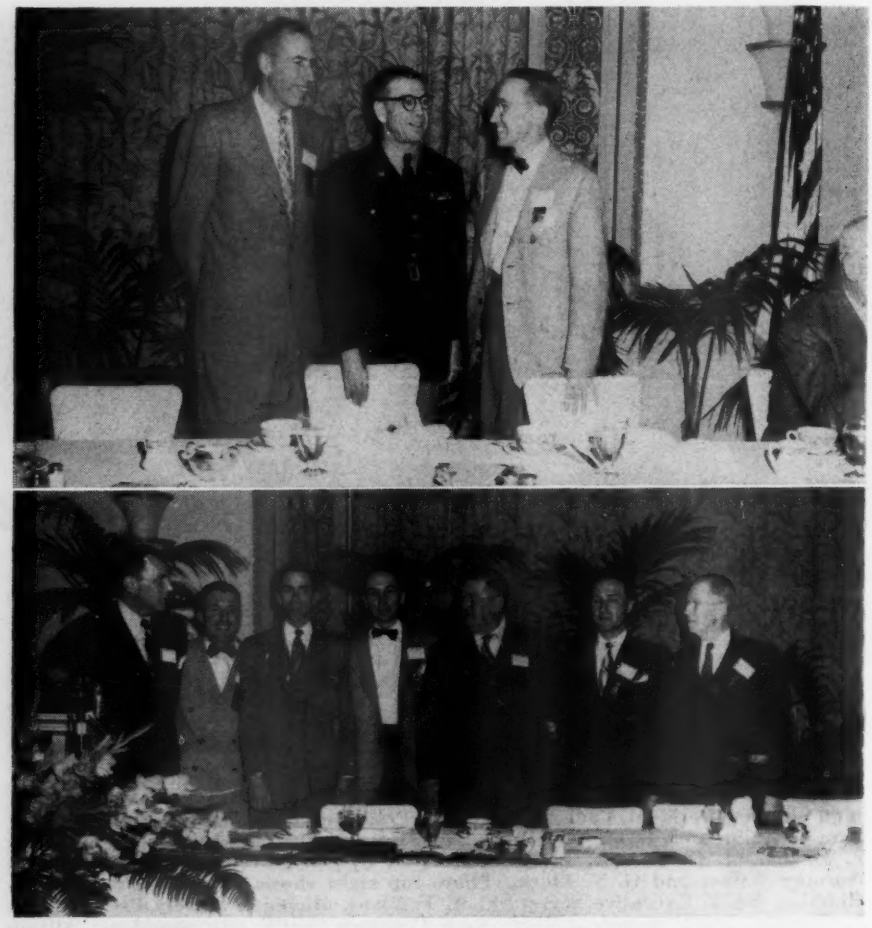
On Saturday night the Annual Banquet was held, with Mr. Charles E. Hatch, Vice-president, OSPE, serving as Toastmaster. The Banquet was followed by a dance which concluded the convention.

MINNESOTA SOCIETY HOLDS ANNUAL MEETING IN MINNEAPOLIS



Shown above are photos from the recent Annual Meeting of the Minnesota Society. At the left, Paul R. Speer, P. E., left, District Engineer, U. S. Geological Survey, St. Paul, receives congratulations as the 1951 incoming president of the Minnesota Society from outgoing President Gordon E. Bodien, P. E. In the middle photo, left to right: Harold E. McWethy, P. E.; James J. Ryan, P. E., retiring vice-president of the MSPE; George O. Pierce, P. E., newly-elected secretary of the MSPE; T. S. Thompson, P. E., re-elected NSPE director from the Minnesota Society; and Charles E. Doell, P. E., 1952 president-elect of the MSPE. On the right, left to right: Louis A. Zeman, P. E.; A. H. Merrill, P. E.; C. A. Thompson, P. E.; S. L. Stolte, NSPE President; Carl T. Nordstrom, U. S. Bureau of Public Roads, St. Paul.

NEW JERSEY SOCIETY HOLDS 27TH ANNUAL CONVENTION



Pictures above show members of the New Jersey Society as they met for the Society's 27th Annual Convention at the Hotel Hadden Hall in Atlantic City on April 6 and 7. Top, left to right: S. Herbert Taylor, P. E., Program Chairman and State Board Commissioner; Major General J. S. Bragdon, Deputy Chief of Engineers, U. S. Army and New Jersey President Louis T. Klauder, P. E. Bottom photo, left to right: Hugh C. Clarke, P. E., Past President; Joseph Tomasulo, P. E., National Director; Merton Adams, P. E., Secretary-Treasurer; Louis T. Klauder, P. E., President; Leo K. McKee, P. E., National Director; Frank C. Mirgain, P. E., 1st Vice-President and Amos Dixon, P. E., 2nd Vice President.

Plans Announced For New York SPE's Silver Anniversary Convention

The New York State Society will meet at their Silver Anniversary Convention at the Hotel Statler in New York on May 10, 11 and 12. All functions at the convention will be held in the Sky Top and Penn Top Rooms of the hotel. The Honorable Vincent R. Impellitteri, Mayor of the City of New York, will welcome the visitors at the opening day luncheon, Thursday, May 10.

Since this convention represents 25 years of progress of the New York State Society, a full program of luncheons, forums, symposium and entertainment has been planned.

The convention will feature exhibits of a group of manufacturers representing a typical cross-section of industry. The exhibit area will be in the Penn Top Room. Appropriately enough for the Silver Anniversary Convention, the Convention Committee has selected as the symposium keynote the title, "The Engineer in Industry," to be held on Thursday, May 10, at 3 p. m.

An innovation has been added to the annual convention theme. The committee felt it fitting that a professional convention such as this should be attended by representative colleges and universities in New York State. For the first time, a group of metropolitan area colleges have purchased booth space, which are expected to be gathering points for large numbers of the colleges' respective alumni. These colleges are Brooklyn Polytech, Cooper Union, C. C. N. Y. and Manhattan.

On Friday, May 11, a forum will be conducted on the subject of the "Engineering College and Industry."

As the final event of the session, the convention will feature an entertainment and dance in the main ballroom of the Hotel Statler.

New Jersey Society Holds 27th Annual Meet In Atlantic City

Speeches by Major General J. S. Bragdon, Deputy Chief of Engineers, Department of the Army, and the Honorable Robert Hendrickson, U. S. Senator, State of New Jersey, highlighted the 27th Annual Convention of the New Jersey Society when it met in Atlantic City at the Hotel Haddon Hall on April 6 and 7.

General Bragdon addressed the Society on "The Engineer's Role in the Defense Program" at the opening morning session of the convention. Following Bragdon's address, a luncheon was held in the Vernon Room, at which the Honorable Joseph Altman, Mayor of Atlantic City, welcomed the group. Featured speaker at the luncheon was Mr. J. Anton Hagies, Secretary-Treasurer, Citizens Highway Committee of New Jersey, who spoke on "Operation-Freeways."

Later in the afternoon, Mr. Blair Birdsall of the John A. Roebling's Sons Company spoke on "Prestressed Concrete," and a film, "Walnut Lane Bridge" was shown through the courtesy of the Portland Cement Association.

At the Annual Dinner which concluded Friday's activities, awards were presented to Mr. C. George Krueger, P. E., as "Engineer of the Year," and the Honorable Theodore D. Parsons, New Jersey Attorney General, as "Citizen of the Year."

The Annual Delegates' Meeting was held on Saturday morning, April 7, and a luncheon was held at 12:30 at which the Honorable Robert Hendrickson, U. S. Senator from New Jersey, spoke to the Society on "World Government." The convention was concluded with a dinner dance for the members and their ladies.

Exhibits were an important feature of the Convention, with forty-five exhibitors participating. The South Jersey Chapter of the New Jersey Society, under the leadership of President Richard Paul, P. E., and General Chairman George Dign, P. E., acted as host Chapter.

The Ladies Program, under the chairmanship of Mrs. S. Herbert Taylor, included luncheons, a visit to Brighton Orchid Farm and the Annual Dinner and Dinner-Dance.

The Ladies' Program will feature, in addition to the scheduled convention program, a tour and exhibition through the courtesy of du Pont on the subject "From Calico to Nylon."

Ashley Heads Division Of Greater New York Boy Scout Fund Drive

Mr. Edward E. Ashley, P. E., member of the New York State Society, has accepted the Chairmanship of the Construction and Materials Division for the 1951 Finance Drive of the Greater New York Council, Boy Scouts of America. In addition, Mr. Robert Raisler, P. E., NYSSPE member, will head the Plumbing, Heating & Air Conditioning Committee for the Drive.

Mr. Ashley is also a life member of the American Society of Heating and Ventilating Engineers, a member of the Institute of American Electrical Engineers.

The Construction and Materials Division will participate in helping the Boy Scouts reach their 1951 Finance Drive goal of $2,000,000. One million of this is to be used for operations, programming and training; the other million for camp expansion and improvements.

Plastics Discussed At Recent Meeting Of Galveston Chapter

The Galveston County Chapter of the Texas Society met for a dinner meeting at the First Methodist Church Educational Building in Texas City on February 19.

Mr. T. A. Wilker, Chief of "Vinylite" production at the Carbide and Carbon Chemicals Corporation, presented a talk on "The Story of the Plastic Industry." A question and answer period followed the address.

More Engineers' Week . . .

Pictures on the right depict Engineers' Week activities which were carried out by two Chapters and one Society. In the TOP PHOTO, some of the members of the Northeast Chapter, Missouri Society, are shown as they were entertained at a luncheon honoring the Chapter and given jointly by the Lions and Rotary Clubs in Hannibal during the Week. The group includes, left to right; seated: Roger C. Higgins, president of the Lions Club; A. C. Kirkwood, guest speaker; R. L. Heiser, president of the Rotary club. Standing, left to right: D. P. Richart, president of the Northeast Chapter, MSPE; and Dean Wilson, president of the Missouri Society. MIDDLE PHOTO: Members and guests of the Topeka Chapter of the Kansas Society are shown at a dinner meeting which was held during Engineers' Week. Left to right: O. K. Johnson, Topeka Chapter member; A. J. Mowry, president, Topeka Chapter; Colonel Jack Singleton, guest speaker; and George W. Lamb, District Director, A. S. C. E. BOTTOM PHOTO: Governor Luther W. Youngdahl of Minnesota is shown as he signed the Engineers' Week Proclamation. Looking on are, left to right: Oliver R. Van Krevelen, Minnesota Assistant Commissioner of Administration; John E. Hawe, MSPE member; State Senator Gordon H. Butler, MSPE member; and Sidney L. Stolte, President, NSPE.

Piedmont Chapter of South Carolina Society Meets

Shown above are members of the Piedmont Chapter of the South Carolina Society as they met at the Ottaray Hotel in Greenville, South Carolina on April 9.

Minnesota Makes Public Statement On Engineering Hiring

The Minnesota Society, together with NSPE, has issued a statement to public officials of Minnesota relative to retaining the services of consulting engineers.

In a foreword the Society states that it is vitally interested in seeing that the highest standards of ethical practice are maintained by professional engineers.

"We believe that the general public will benefit and that a substantial improvement in public services will result if the obsolete practice of asking consulting engineers to submit competitive bids is completely eliminated," the statement reads.

"We hold that it is no more logical to employ an engineer on the basis of competitive bids than to employ a physician or an attorney by the same method. The best public interest can be served only by selection of the engineer considered best fitted to perform the services required. Under Minnesota law public bodies are not required to receive competitive bids for engineering services, or to select engineers on the basis of lowest price.

"We recommend that public officials who are responsible for the selection of engineering services make careful investigation of the honesty, integrity, and ability of the engineers being considered with respect to the type of work and problems involved, and then make a selection. After selection of the engineer the fee should be set up by negotiation using recognized fee schedules as a minimum basis," the statement concluded.

Kraissl Honored By Bergen County Chapter, NJSPE

Frederick Kraissl, Jr., P. E., past president of the Bergen County Chapter of the New Jersey Society, was honored by Chapter members at a testimonial dinner held in his honor recently in Hackensack.

Commissioner Alonzo L. Jones, President of the New Jersey State Board of Professional Engineers and Land Surveyors, Professor Frank C. Mirgain, P. E., Vice President of the New Jersey Society and Charles J. Dodge, P. E., Managing Director of the New Jersey Society were included among the guests. The Chapter presented the honor guest with an engraved wrist watch and a gavel in appreciation of his service to the group.

Georgia Tech Professor Speaks To Atlanta Chapter

A recent meeting of the Atlanta Chapter, Georgia Society, was highlighted by a lecture, "The Attack on Outer Space," delivered by Professor Allen Pope, member of the faculty of the Georgia Institute of Technology, Department of Aeronautics, and an outstanding authority on aeronautical engineering, rocket propelled missiles and space ships.

As an interesting climax to Professor Pope's lecture, a colored movie giving a "close-up" of the launching of a V-2 rocket was shown by Mr. William Evans of Georgia Tech.

Kolhepp Addresses Joint Milwaukee Engineers Meet

The Milwaukee Chapter of the Wisconsin Society joined with the Engineers' Society of Milwaukee and the Society for the Advancement of Management in presenting Mr. Charles E. Kohlhepp, President of the Wisconsin Public Service Corporation, in an address on "Defense Mobilization Today" at the Public Service Building Auditorium in Milwaukee on February 21.

Mr. Kohlhepp has been Assistant Administrator for Program of the National Production Authority since September, and, having just returned from Washington, brought the latest information about N. P. A. activities to his audience.

New York State Society of Professional Engineers—Silver Anniversary and Convention and Annual Engineering Industries Exposition. May 10, 11 and 12. Statler Hotel, New York City.

Pennsylvania Society of Professional Engineers—16th Annual Convention. May 18 and 19. Allentown.

Connecticut Society of Professional Engineers—Annual Meeting. May 26. New Haven.

District of Columbia Society of Professional Engineers—Annual Meeting. May 28. Washington.

Georgia Society of Professional Engineers and Tennessee Society of Professional Engineers—Joint Summer Meeting. June 15 and 16. Lookout Mountain, Tennessee.

National Society of Professional Engineers—Annual Meeting. June 13, 14, 15 and 16. Hotel Nicollet, Minneapolis, Minnesota.

Tau Beta Pi

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vigorous generation viewing for the first time the tremendous potentialities revealed in the refinements of the scientific method. Paradoxically, he seems a bit frightened (or at least overawed) by what he sees. He tends to seek an often-nebulous "security" at the expense, sometimes, of proper self expression. He falls victim all too often to the determination of *who* is right, rather than *what* is right. In personality he has been accused of resembling an ingrown toenail: inside the toe, inside the sock, inside the shoe.

Tomorrow he can and should blossom out into a better all-around man (though he may be particularly adept at some specialty). The engineer has the wherewithal to cast away for good his own fears and the fears of the contemporary world. He needs to take a chance.

It is not even a chance. It is a sure thing. Opportunity — yea, even Destiny — keeps right on knocking at the door. It may burst in at any moment. I hope the engineer will be ready and waiting.

Mr. Hammell . . .

SCIENTISTS say the future of the world is in the hands of the engineer. This statement may be scoffed at by the general public, but I believe the engineer can ably defend the premise.

A glance at the present will indicate the dependency upon the engineer. Without the engineers of the past, the modern age of machines would be lost. Engineers are necessary in the design and manufacture of almost every article used today.

Business and professional men depend upon the power, equipment, and transportation provided by engineers. Farmers, who must feed the world, would not be able to supply nearly the amount of food currently produced without the aid of machines.

The ability of a nation to produce goods governs the position of that nation in both peace and war, and the outcome of the present international situation may depend upon the ability of the engineers to produce more and better equipment.

The relative size of the world, with respect to travel, has decreased greatly in the past, and with the ultra-speed transportation that may be designed in the future, it seems reasonable to expect that travel time will be reduced much more. This will have a great effect upon the unity of the nations in the world and, in turn, will have a very marked effect upon the future.

I do not want to imply that engineers are independent of all other professions, which obviously is not true. I do believe, however, that through the dependence upon engineering products by everyone, the future of the world is in the hands of the engineer.

Mr. Durfee . . .

WINSTON CHURCHILL once said: "If we are to bring the broad masses of the people in every land to the table of abundance, it can only be by the tireless improvement of all our means of technical production." This is a simple statement of the technological challenge which now confronts the engineer.

It is evident today that the human race is passing through one of the darkest periods of its history. It may even prove to be the most tragic of all. For the world, just recovering from two great wars of unprecedented violence which penetrated into the remotest corners of the world, is today,

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tion. In these areas all problems are more or less inter-society (common to constituent members) and intra-professional (within the profession of engineering). Thus we see that ECPD is not chartered to work in the sphere necessary to meet the public, economic and political needs recited above.

Engineers' Joint Council Active

THE work of EJC is inter-society and extra-professional, dealing as it does with the relationships between engineers and industry, and between engineers and government. Let's look further into the EJC. We are informed that the prime objectives are:

(a) To advance the general welfare of mankind through the available resources and creative ability of the engineering profession.

(b) To promote cooperation among the various branches of the engineering profession.

(c) To develop sound public policies respecting national and international affairs, wherein the engineering profession can be helpful through the services of its members.

EJC is normally constituted of the so-called Founder Societies. During the past year some sixteen Engineering Societies participated in a conference called by EJC to get a close-up look at the value of a broader viewpoint. At that conference were developed the following criteria for deciding whether to participate in matters of national and international scope:

(1) matters should be of wide interest to the profession, and

(2) matters should have direct impact on the profession or regarding which it is believed that action by the profession can contribute to the public interest.

To achieve the objectives as set forth, the Council proposes to:

(a) Act as an advisory and coordinating agency to seek and study matters of mutual interest to *the constituent societies* of Council and to recommend parallel action by them.

(b) Represent the *constituent societies* of the Council in instances in which *constituent societies deem such joint representation to be desirable.*

(c) Administer on behalf of the engineering profession, those activities authorized by a *majority* of *the constituent societies* of the Council.

As broad and commendable as are the objectives and approaches of EJC to certain of the problems of *the constituent societies,* there is still no sign that they are set up for or can handle the needs which confront us as individual engineers. Much argument would ensue before policy matters which affect relations with the public, the military, industry, our government in general, and so on would be referred to the memberships by the respective constituent societies, as they must be to have the weight of numbers in a pressure group-conscious civilization. Obviously, many opportunities would be missed because the often-needed urgency of action cannot be accomplished except by a direct-membership type of organization with facilities for the ready recognition of opportunities and the fast communication of its membership's wishes. EJC is not sufficiently relations-conscious, political-comprehending or quick-moving. Nor is it backed up by the power of the individual voter and taxpayer.

The Industry Comparison

IT is always difficult for practical-minded men to "come to grips" with anything so nebulous as idealism. Therefore, you would be perfectly in order in suggesting that it was about time we got down to "short strokes" in this discussion of the kind of a task force needed to promote the engineers' interests. Let's do this by drawing one simple parallel to demonstrate the similarity between the engineering profession's problems and their solutions, and those of the industries and manufacturing plants. Most of us are employed in industrial plants or, if not, work closely with them. Many of us run our own businesses. In either case, we know that great organizational skill is needed to forge ahead, whether it be in the strict competitive sense, or in public esteem.

Industrial plants have two types of workers:

(a) *the producers*—the craftsmen busily engaged at the production machinery which actually turns out the goods or products of that industry and

(b) *the service group*—the planners and promoters, the financial and tax men, the sales force, the legal advisers, the advertising department, the public and employee relations men, and so on. The various units within this group provide the market for the product and establish favorable relations with suppliers, equipment dealers, labor unions, the customers and many other "interdependents" in business life. They establish competitive prices, keep the industry on an even keel financially and out of trouble with each other or the Government, increase public acceptance and good will, and in other ways promote the general well-being of that industry to the extent that it remains competitive in its particular field and is able to forge ahead.

Both Types of Workers Needed

How far would one type of worker get without the other? The *producers* must be on the job to turn out the product. The *service group* must be on the job to make that possible, and to continue the opportunities for the workers to earn a living. The two types cooperate in all sorts of industries to sustain community living standards, commercial enterprises and in general the American way of life.

All of us are familiar enough with successful business methods to know that in this "two platoon system" of *producers* and *service group,* the problems of both are so specialized that an industry is better off if each group sticks to its respective work. For example, most shops provide an education pattern for the production line employees, and this schooling is supplemented by time-and-motion studies, skilled help from the foreman or production chief, trade schools and trade societies, and so on. Such folks deal with "things" and look at matters from a direct cause and effect viewpoint. Imagine the confusion that would result if they tried to take over the duties of the financial and tax men, the sales force, or the advertising department, where financial pioneering must be undertaken, customer relations evaluated, and competitive opportunities seized and exploited.

Engineering is Big Business

The engineering profession, too, is big business. In the profession there is the same need for two types of

workers;

(a) The *producers* who in the profession are the engineers working on designs, writing specifications, discussing problems with clients, operating projects or manufacturing plants, and so on. These are the men actually turning out the engineering work, just as the producers in industrial plants turn out products. Training the engineering producers for this work are the engineering schools and colleges. Helping with this training are the technical societies—groups which have taken as their principal job the work of increasing the technical "know-how" of engineers; work which contributes to developments in engineering, making engineers more skilled, more craftsmanlike. more necessary to a well prepared or turned out project, and

(b) the *service group*, the men in the profession who have not merely technical proficiency, but have also a broad conception of our need for better relations, and the practical mindedness to tackle them at the ground level; men with "a capacity for judicial thinking, an insight into the motives and reactions of others and an instinct for evaluating and handling purely human situations."

THE business world meets the problems of promotion, customer relations and good will among the public by putting the job into the hands of people with specialized skills often having no relation whatever to manufacturing methods. Such agents may be within, or wholly outside the framework of the plant organization. We in engineering feel it desirable to retain our relations work within the profession —if for no better reason than that's the only way we can afford to do it at the moment. We are still dependent upon the special aptitudes of willing and generous members of the profession for this work.

Obviously, the men who handle this job for us must "qualify" in some acceptable manner and be grouped for effectiveness into an association or society. In view of the extremely wide range of interests exhibited in the various branches of engineering it would seem that an organization necessary to look after the interests of all who are entitled to practice in the various branches, should have the true characteristics of a "general agent." In other words, a group not directly connected with any society representing a specific branch of engineering, but created and controlled by a "grass roots" membership. Such a group would have sub-spheres of work dealing with our various non-technical needs as they have been defined above.

We can't do justice to the full potentialities of the engineering profession without the well-rounded performance made possible by the second type of workers—the *Service Group*. And like industry, the engineering profession cannot feel secure unless these service group functions are watched over by men specially trained and attuned to the job.

There have been attempts in the past to establish such groups, both as parts of technical societies and independently. With the formation of the National Society of Professional Engineers in 1934, engineering at last had found a general agent type of grass roots organization, strictly non-tech-

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nical but still representative of all branches of engineering in handling problems at local, State and National levels. Evidence of recognized need for this type of organization is found in its rapid growth in a short period to membership in excess of 24,000. It is the only active, fully-staffed group devoting all its efforts to the professional aspects of engineering; a single, powerful voice, watching over the social needs of the profession and multiplying the desires of a substantial segment of the tax-paying public.

In recognition of its great responsibilities to the engineering profession, the Society has inaugurated some extremely helpful activities. It provides campaigns for public recognition of the profession's important contributions to progress and welfare. It has a constructive program designed to raise the economic and social status of the individual.

This matter of selecting engineering representation for our "relations" problems should not be particularly controversial among engineering groups. It isn't as though the Society were apart from or inimical to our interests as engineers. On the contrary, it is set to do engineers' bidding. Wouldn't it show progressive attitude, for example, if the technical societies and their councils adopted it *as their general agent,* as well as that of their members as individuals?

The Society is mobile, adaptable. It is not irrevocably fixed in policy, nor are its policy makers given more than a nominal term in office. New leadership is constantly being sought from among the best men available. Leaders in the technical societies and councils understand engineers' problems. Just think of the additional valuable contributions these men could make by utilizing a more effective vehicle for social, political and economic gains.

This is an appeal for Unity in the engineering profession. Unity—for what? Unity in handling the everyday needs of engineers that reach beyond the academic and technical phases and yet common to all branches; needs that embody matters which are settled by the prestige of a taxpayer, by the voter on a give and take basis, by on-the-spot decisions and action; by the same means employed successfully in business. Such unity, for such purposes, is offered by the Professional Society, at National, State and local levels. It is our best bet!

Tau Beta Pi

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(and God forbid), on the brink of a third great conflict.

All wars are perpetrated by the human frailties of hatred and greed; and hatred and greed of man arise from either abundance or lack of abundance. Thus the role of the engineer in determining the future of the world comes into being.

But, what does all this mean to the engineer? It means he is called on first to bridge the gap between science and the common man; and his function is to develop the applications of science in such a manner that they may fit beneficially into the existing organization of civilization. He must use his creative ability to conceive a workable, worthwhile plan, utilizing machines for expanding the productivity of man and yet meeting the ever-complex human problems always associated with the advent of changes.

Thus, the future of the world is truly in the hands of the engineer of today! To meet the challenge he must bring the masses of people "to the table of abundance" by following the difficult road beset with the complexity of technological, social, and professional demands.

Mr. Nesline . . .

THE future of the world is in the hands of the engineer. I don't agree. It is my opinion that the position of the engineer with respect to the world's future may be likened to that of an automobile mechanic. The mechanic keeps a car in good mechanical condition so that the driver has dependable transportation. There are times, of course, when the car's future depends strictly upon the mechanic, but the major responsibility for the car rests with the driver. In like manner, the major responsibility for the world's future rests with its statesmen. These men, now more than ever before, determine its destiny. The skill of the engineer, however, may very well determine the success of the statesmen's plans.

World War II is a case in point. It is commonly agreed that without the technological progress achieved by the engineering profession during that conflict, the Allies could not have gained the many important victories so necessary to the winning of the war. However, engineers, as such did not direct, or formulate, the foreign policies that determined the course of world events. Engineers simply made possible the realization of these policies. Thus, although the engineer's influence over the future of the world is significant, it is not nearly omnipotent.

Mr. Wasserman . . .

Perhaps the most immediate problem facing mankind today, according to Clyde Kluckhohn, noted professor of anthropology at Harvard University, is the development of means for minimizing Man's aggressive impulses and diverting them into socially useful channels. Present experimental data indicate, say psychologists, that aggressive behavior is usually a reaction to a frustrating situation in life. This seems to be true both in interpersonal relations and in international affairs. Both individuals and nations want economic security and political freedom, and both manifest aggressive tendencies of one sort or another when they find these impossible of achievement.

An important long-term contribution to the elimination of the problems caused by economic insecurity is made by engineering and technology. Technological advance provides new job opportunities in new productive fields, continues national growth and prosperity in the face of dying natural resources, makes human necessities cheaper and more plentiful, perfects new techniques for mass education and information, and brings opportunity for world-wide travel closer and closer to all the people which helps develop mutual understanding of common economic and other problems and furthers cooperative assistance.

The immediate effect of great technological advance, however, may on occasion be the uprooting of families and the upsetting of familiar patterns of life through the forced obsolescence of long-established industrial and agricultural techniques. Thus, between the time a technological innovation is introduced and the time it becomes truly effective in promoting the economic security of Man, there may be a period of variable length during which the opposite effect is achieved. As Dr. W. E. Wickenden, former President of Case University points out in his pamphlet, "A Professional Guide for Junior Engineers," it is the engineer's responsibility to "see that the full productive capacity of his accomplishments is utilized most effectively for the welfare of humanity."

The engineer, by virtue of his native abilities and his training, is especially well qualified to assume an active role in human affairs. The good engineer has imagination, good judgment, courage, integrity, natural leadership aptitude, ingeniousness, the ability to visualize causal relationships, and the ability to think, speak, and write lucidly. All of these qualities lend themselves naturally to work in the field of human relations.